Twenty-Ninth Annual Report

OF THE

Provincial Board of Health

OF

Ontario, Canada

FOR THE YEAR

1910

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed by L. K. CAMERON, Printer to the King's Most Excellent Majesty
1911.

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29-37 Richmond Street West
TORONTO

To His Honour John Morison Gibson, K.C., LL.D.,

Lieutenant-Governor of the Province of Ontario.

May It Please Your Honour,—I herewith beg to present for your consideration the Twenty-ninth Annual Report of the Provincial Board of Health for the year 1910.

Respectfully submitted,

W. J. Hanna,

Provincial Secretary of Ontario.

TO THE HONOURABLE W. J. HANNA,

Provincial Secretary of Ontario.

SIR,—I have the honour to submit for your approval the Twenty-ninth Annual Report of the Provincial Board of Health, made in conformity with and under the provisions of the Public Health Act, for the year 1910.

I have the honour to be,

Sir,

Your obedient servant,

JOHN W. S. MCCULLOUGH,

Chief Health Officer of Ontario.

PROVINCIAL BOARD OF HEALTH OF ONTARIO

1910.

Charles Sheard, M.D., M.R.C.S., Eng., M.H.O., *Chairman*	Toronto
Milton Ira Beeman, M.B., M.H.O.	Newburgh
Wm. R. Hall, M.D., M.H.O.	Chatham

Secretary and Chief Health Officer,

John W. S. McCullough, M.D.

Provincial Bacteriologist,

John A. Amyot, M.D.

Branch Laboratory—Kingston,

W. T. Connell, M.D.

Provincial Chemist.

H. M. Lancaster B.A.Sc.

Medical Inspector,

R. W. Bell, M.D.

Sanitary Inspector,

George E. Young.

CONTENTS.

Page.

1. Resumé of the Transactions of the Board, 1910 7
2. Amendments to the Public Health Act, 1911 12
3. Report of the Secretary 14
4. Reports of Medical Inspector, Dr. R. W. Bell 22
    - Cobalt 36
    - Orangeville Nuisance 32
    - Pollution of Stoney Lake 28
    - Pollution of the River at Bancroft 30
    - Scarlet Fever (Belleville and St. Thomas) 34
    - Smallpox, General 39
    - Strathroy Cemetery 33
    - Toronto Basement Workrooms 33
    - Treatment for Prevention of Rabies 42
    - Typhoid Fever—General and Supplementary 37
    - Sewerage—Collingwood, Oshawa, Sandwich, Thorold and Trenton ... 22
    - Water Supply—Coldwater, Gravenhurst, Latchford, Nepigon, Port Arthur and Temagami 22
5. Supplementary Report on the Lindsay Ozone Water Purification Plant 44
6. Report of the International Commission on the Control of Bovine Tuberculosis 49
7. Report on The Lady Grey Hospital for Tuberculosis, Ottawa 67
8. Laboratory Report (Toronto), Dr. J. A. Amyot 68
    - (1) Report for last quarter of 1910—Chlorination of Water; Milk and Liquor Analyses, etc. 68
    - (2) Further Report *re* Cheese Factory Waste 80
    - (3) Report *re* Rabies 81
    - (4) Report *re* Pasteur Vaccination Against Rabies 82
    - (5) Summary of Specimens Examined during the year 1910 85
9. Laboratory Report (Kingston), Dr. W. T. Connell 136

APPENDIX.

10. Reports of City Medical Health Officers 137
11. Reports of Town Medical Health Officers 167

Resumé of the Transactions of the Board

For the Year Ending December 31st, 1910.

BY THE SECRETARY.

During the year 1910 the Board held four regular and two special meetings.

Dr. Charles A. Hodgetts, who resigned from the position of Chief Health Officer in June of this year, to assume the responsible position of Medical Adviser to the Commission of Conservation, was succeeded by the writer, who assumed this position on the first of August. Dr. Hodgetts possessed in an unusual degree the confidence of his colleagues, as evidenced by the following transcript from the Minutes of the July meeting of the Board, when it was unanimously resolved:—"That the Provincial Board of Health on July 12th, this being the first meeting thereof since the resignation of Dr. Hodgetts has occurred, desire to place on record the appreciation of this Board of the work which Dr. Hodgetts has done in connection with health matters in the Province of Ontario, and further desire to express their deep regret that circumstances have occurred calling Dr. Hodgetts to a new field, thus necessitating his severance from our association; that as a colleague he was at all times most agreeable and one whose judgment proved most invaluable. We desire to extend to Dr. Hodgetts our hearty well-wishes for his prosperity and the success of his efforts."

Later in the year the Laboratory suffered a distinct loss in the resignation of the Provincial Chemist, Dr. G. G. Nasmith, who became chemist of the Laboratory of the City of Toronto. His place has since been filled by the appointment of Mr. H. M. Lancaster, B.A.Sc.

The exhaustive report respecting the Lindsay Ozone Purification Plant, published in the Board of Health Report for the year 1909, in which this plant was severely condemned by the experts from our laboratories, who made the report, being called in question by the Water Commissioners of the Town of Lindsay, the Honourable the Provincial Secretary instructed the writer to have another examination of this plant made by one of our experts, and an outside bacteriologist named by the chairman of the Water Commissioners of Lindsay. Accordingly, in September last, Dr. G. G. Nasmith, of our Laboratory, and Dr. T. D. Archibald, of Toronto, were instructed to proceed to Lindsay and make a thorough examination, so that there might be no question as to the efficiency or otherwise of this plant. The results of this examination, enclosed in the present report, show the system installed at Lindsay to be utterly inadequate for the purification of its water supply. This question it would seem is now settled without any doubt, and the results vindicate completely the position taken in the matter by the Provincial Board of Health. It also is an object lesson for municipalities undertaking such experiments without the advice and sanction of the Board, as required by law. The Town of Lindsay has spent upon this plant a large sum of money, for which, unfortunately, they have received no value except experience.

The plans and specifications of the following sewerage plants were approved during the year, viz.:—

New Liskeard.
Kincardine.

Oshawa. (Amended plans.) In this case the Ontario Railway and Municipal Board asked that in addition to the approval, this Board issue a certificate that such sewerage system is required. Accordingly, this was done.

Waterloo.

Almonte. (Septic tank).

Tillsonburg.

Thorold.

Ottawa.

New Toronto. (Amended plans).

Latchford.

Stratford. (Extension of sewer).

The plans and specifications of:—

Owen Sound, Wingham, Steelton, Kincardine, Trenton, were approved on condition that if in the future the Board deemed it necessary that further treatment of the sewage effluent in each case is required, these towns shall comply with the request of the Board in this respect.

The plans and specifications of:—

Walkerville and Port Arthur were not approved, it being felt by the Board that such plans and specifications would not prevent pollution of the waters into which the respective sewage effluents would enter.

TUBERCULOSIS.

During the year the Board has continued its campaign of the education of our citizens in respect to the means of prevention and cure of this affection. The Tuberculosis Exhibit, inaugurated by our predecessor, was continued at intervals throughout the year, and for the first time in Canada a new departure was made on the 1st of December last, by the Exhibit being installed in a railway car secured from the Canadian Pacific Railway and sent from place to place throughout the Province. In this way a large number of places were enabled to secure the Exhibit, and the cost was reduced to about one-quarter of that which formerly obtained. A very considerable interest has been taken in this Exhibit, as evidenced by the large numbers visiting the Exhibit and the lectures and stereopticon views given.

It is gratifying to know from the returns of 1908 (the latest available), that the death rate from this disease is slowly but surely being reduced, the number of deaths in 1908 being 2,511, or about 1 in 13 of the total death rate.

Much yet remains to be done, however, and the plan of education in respect to this disease would seem to be of very great value. It is the object not to alarm the people, but to give them such information as will enable them to understand what all authorities are agreed to—that Tuberculosis is a communicable disease, preventable by proper care, a disease with a tendency to natural cure when associated with the aids of good food, good living conditions, avoidance of drink and all forms of intemperance, pure air, sunshine and a cheerful, optimistic conception of the disease.

MEDICAL AND DENTAL INSPECTION OF SCHOOLS.

This subject is in its very infancy in the Province of Ontario. It is, without doubt, of the greatest importance. The City of Toronto has inaugurated a partial inspection of the children in her public schools. It is to be hoped that the experiment will be extended, and once well established, there is no doubt its value will be so much in evidence that it will eventually be adopted in the whole Province.

With commendable enterprise the Dental Society of Toronto began late in the year some work in the matter of the examination of the teeth of the public school children. A limited amount of this work has shown its great need. Two schools were taken, one in which foreign born children predominated, the other being attended by Canadian children. As might be expected the former showed complete neglect of the children's teeth, with consequent suffering and physical deterioration. The Canadian children, while not nearly so bad in this respect, showed in many cases evidence of very great neglect. The matter is of so much importance that it is hoped some provision may be made for the further prosecution of this excellent work, so that by medical and dental inspection the future generation may be given the best chance possible to grow up as healthy, vigorous people, worthy of this great and wealthy province.

Inspection of Meats.

This is a question which imperatively demands the attention of the Provincial authorities. While the inspection of export meat by the Dominion authorities covers pretty thoroughly the product which goes to other countries, our own citizens, to whom our first duty is due, are practically unprotected.

The writer had an opportunity a short time ago of inspecting the carcasses of condemned meat at a large abattoir in the City of Toronto. Amongst a number of others of one morning's killing there was shown the carcass of a virgin heifer, which was practically lined with tuberculosis from stem to stern. A number of others were as bad as this, others nearly as bad. The Dominion Government Inspectors tell me such conditions in respect to tuberculosis in slaughtered animals, including hogs, are very common, and that when local buyers find this condition prevailing in a certain locality they naturally avoid buying there, so that they may not suffer financial loss. What must be the result? The animals are thereupon sold to local butchers and are consumed in the country and smaller towns, where there is no inspector. If we are to have any results in the prevention of tuberculosis and other diseases, we must have some system of rigid inspection of all meat used by our citizens.

Rabies.

There was a special meeting of the Board, held on February 9th, 1910, in consequence of an outbreak of Rabies in the western portion of the Province. The Dominion Government issued a proclamation respecting its control, and the co-operation of the Provincial Government was invited. Regulations were issued by the Provincial Board of Health, ordering the municipal authorities in all counties west of the eastern boundaries of the counties of York and Simcoe, to enforce an order that all dogs should be muzzled or chained up, and directions were given regarding the proper procedure in cases of rabies affecting animals. The order remained in force until December 7th, 1910, when the epidemic having subsided, the order respecting the muzzling of dogs was rescinded.

Up to the end of the year the brains of 215 animals were examined by the Provincial Laboratory, of which 64 showed the presence of Negri Bodies, which is considered absolute evidence of infection from Rabies. The Board of Health undertook the treatment of patients who had been bitten by dogs or other animals which presumably had become infected, and the vaccine treatment was secured from the

Research Laboratory, of the City of New York, at a cost of $25.00 per patient. There were in all 73 patients under treatment—52 adults at the Toronto General Hospital and 21 children at the Hospital for Sick Children. All these patients were, by the courtesy of these hospitals, treated by the officers of the Board of Health, and in every instance the treatment was successful in controlling the infection. In consequence of the large number of cases, the Board was able to make a more satisfactory arrangement with the laboratory in New York, whereby the cost of each treatment was reduced to $20.00, and, by order of the Honourable the Provincial Secretary, $5.00 was returned to each patient or, in some instances, to the municipality which had assumed the cost.

When it is remembered that the expense incident to such treatment in former years, when the patients were obliged to repair to the Pasteur Institute in New York, was at least $200.00, the amount of saving in the aggregate to our people is at least $13.140.00, besides the long journey and prolonged absence from home.

The Board is in receipt, in most cases, of very grateful letters from the patients, or those connected with them, for the care and attention given them as well as for the refund of $5.00 in each case.

The thanks of the Board are due, and most cordially offered to the authorities of the Toronto General and Sick Children's Hospitals for the facilities afforded for these cases. In addition, our thanks are due to the efforts of the municipal authorities and the various police officers, including the Department of Provincial Police for their assistance in carrying out the none too popular muzzling order.

A full report of the whole matter will be found in this volume.

MEDICAL AND SANITARY INSPECTION.

Dr. R. W. Bell has general charge of this work. Associated with him is Mr. George E. Young, who remains permanently at North Bay, and has charge of New Ontario. Much good work has been done by both Inspectors in the matter of the improvement of the sanitary conditions of the Province, and in the suppression of smallpox and typhoid fever, as well as in the inspection of lumber camps and mines of the Province.

BELL VS. J. B. SMITH & SONS.

This claim, amounting to $210.00, was made by Dr. W. J. Bell, of North Bay, for the treatment of a patient who had come to North Bay from the lumber camps of defendants, who, contrary to the "Act Respecting Sanitary Regulations of Lumber and Mining Camps" had no medical contract. The Board of Health found that the cause of illness was traceable to the period of the patient's employ, and the Honourable the Provincial Secretary found for the plaintiff in the sum of $150.00.

THE LABORATORY.

The Laboratory has, in addition to the general work of examination of specimens of sputa, blood and water samples, done considerable work in examination of analysis of the water supply of the City of Toronto and its sewage.

A large amount of work has been done for the Liquor License Department in the chemical examination of samples of liquor seized by the officers of that Department.

The various reports of the Provincial Bacteriologist, as well as those of the branch laboratory at Kingston, will be found herein.

TEMAGAMI.

The report of the Medical Inspector, having indicated that the sanitary conditions prevailing at Temagami were undesirable, the Secretary was instructed to order the Hotel Company there to discontinue pouring sewage into Lake Temagami, and to provide a system of treatment of the sewage, as well as a suitable supply of drinking water.

The following amendments to the Public Health Act were passed at the 1911 session of the Legislative Assembly:

Rev. Stat., c. 248, s. 5, amended.

1. Section 5 of *The Public Health Act* is amended by adding thereto the following subsection:

Duties of Chief Health Officer.

(2) The Chief Health Officer shall be the Executive Officer of the Board and in the intervals between meetings of the Board shall perform such duties and have such powers as are by this Act vested in the Provincial Board of Health.

Rev. Stat., c. 248, s. 13, amended.

2. Section 13 of the said Act is amended by adding thereto the following paragraphs:

Preventing pollution of certain resorts and inland waters.

13. For the sanitary precautions to be taken in Health Resorts, Summer Resorts and upon boats or other vessels plying upon the inland waters of Ontario, and for preventing the pollution of such waters by the deposit therein of sewage, excreta, manure, vegetable or animal matter or filth.

14. For any other matter which in the opinion of the Board the general health of the public or of the inhabitants of any locality may require.

Rev. Stat., c. 248, s. 30, amended.

3. Section 30 of the said Act is amended by adding after subsection 2 the following:

Sewerage or water supply system approval of Provincial Board before money raised.

(*2a*) No By-law shall be passed for the raising of money for the purpose mentioned in subsections 1 and 2, until the proposed water supply or sewerage system as the case may be has been approved of by the Provincial Board of Health, and such approval has been certified in writing and signed by the Chairman and Secretary of the Board. The preamble of the By-law shall recite such approval.

Rev. Stat., c. 248, s. 31, amended.

4. Section 31 of the said Act is amended by striking out the word "may" where it occurs in the first and third lines and inserting in lieu thereof the word "shall."

Rev. Stat., c. 248, s. 71, amended.

5. Section 71 of the said Act is amended by striking out all the words therein after the word "caused" in the fourth line and substituting therefor the words:

Abatement of nuisances by Local Board at expense of occupant or owner.

"And where the occupant or owner of any premises in which a nuisance exists fails to abate the same after having received due notice to that effect, the Local Board of Health by its Medical Health Officer or Sanitary Inspector may enter upon the said premises and take such steps as may be necessary to abate the nuisance, and if the costs incurred in abating the same are not paid either by the occupant or owner within one month, the same shall be returned to the clerk of the municipality who shall place the same against the property in the collector's roll to be collected along with ordinary taxes."

6. Section 89 of the said Act is amended by adding after the word "cholera" in the third line "whooping cough, measles or other disease dangerous to the public health."

Rev. Stat., c. 248, s. 89. amended.

7. Section 90 of the said Act is amended by inserting after the word "shall" in the sixth line the words:

Rev. Stat., c. 248, s. 90. amended.

> "Have power to direct the closing of all or any of the Public Schools, Collegiate Institutes and Separate Schools and churches, and the prohibition of public assemblies when the Medical Health Officer or Board of Health consider it necessary for the prevention of the spreading of any of the said infectious diseases, and the said Schools, Institutes, and Separate Schools and churches shall not be reopened except by order of the said Medical Health Officer or Board of Health."

1. Section 72*a* of *The Public Health Act*, as enacted by section 1 of chapter 32 of the Acts passed in the 5th year of His late Majesty's reign, is repealed, and the following substituted therefor:—

Rev. Stat., c. 248, s. 72a, amended.

> 72*a*. No person shall keep or store any rags, bones or other refuse within the municipality, unless the same are kept or stored on premises approved of by the Medical Health Officer.

Storing of rags, bones, etc.

TO THE CHAIRMAN AND MEMBERS OF THE PROVINCIAL BOARD OF HEALTH.

DR. JOHN W. S. MCCULLOUGH, CHIEF HEALTH OFFICER.

GENTLEMEN,—I beg to submit for your consideration a short resume of what may be of interest to you concerning the Board of Health branch, since I assumed active control of this office on the 1st of September last.

There was an outbreak of typhoid fever in Orono, a village in the Township of Clarke, County of Durham, early in October. On my visit there, in the absence of Dr. Bell, Inspector, I found there had been about twenty-five cases with two deaths. I ordered the Board of Health and Council of the Village to clean up the place forthwith, have all suspected wells examined, permanently close those that from examination of the water seemed dangerous, direct citizens to boil all water, cook all food to be eaten, and take means to protect food from flies. I also advised the appointment of a sanitary inspector (which was done); that a filthy slaughter-house be put in order; and that the township should pay their M.H.O. a decent salary and make him responsible for the care of public health. Dr. Bell made a visit two weeks later and found that my instructions had in the main been carried out, and that there had been, at that time, no secondary cases.

I made a visit to Berlin on the 22nd of September to look into the pollution of an artificial lake in the park there. Samples of the water therein were examined and found to be practically sewage. The pollution seemed to come from the trade waste of certain factories, and I advised this to be turned into the general sewage, which is treated by a disposal system installed some years ago.

On October 12th I attended the Inter-Provincial Health Officers' Conference at Ottawa, report of which is before you.

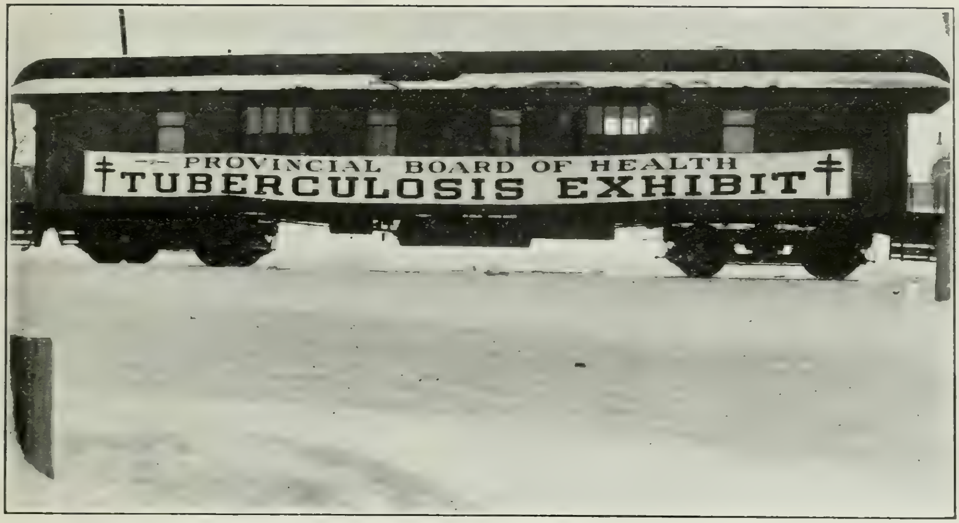
On October 10th I began the itinerary of the Tuberculosis Exhibit at Goderich. Up to date the exhibit has visited, in addition—Wingham, Seaforth, Clinton, St. Mary's, Forest, Parkhill and Berlin. Two men are in charge and the press and medical men of these places have expressed their satisfaction with the appearance and character of the exhibit, as well as its usefulness in the education of our people.

I am, however, not satisfied that the present system of managing the exhibit is either economical or satisfactory. Too much time is lost in moving from place to place, from the fact that the exhibit has to be conveyed to a hall and set up, and after the exhibit is over it has to be taken down and reloaded, involving the loss of two days between each place, so I am trying to make arrangements to secure from one of the Railway Companies a large car (60 ft.) wherein the exhibit may remain permanently. By this means the labor and time of unpacking, setting up, etc., will be avoided, the expense lessened and time economized.

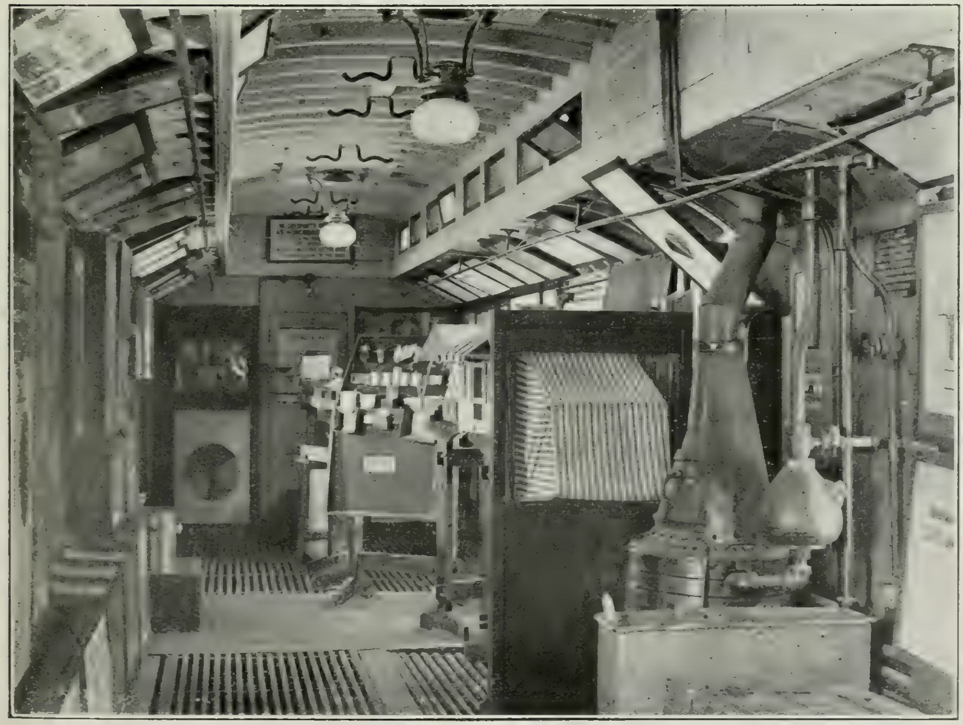
I visited Seaforth and gave a short talk on the subject of Tuberculosis, and I shall be glad if the other members of the Board will follow the example of our Chairman and volunteer to do a similar service when the exhibit is in their neighborhood.

I may say that these visits of the exhibit are apparently much appreciated by the citizens of the various places, if one can judge by the press notices and letters received at this office.

On October 31st I visited Cobalt and spent two days examining into the sanitary condition of the mines and town. Dr. Bell's report regarding his visit there during the month of August is before you.



The Tuberculosis Car.



Interior View, Tuberculosis Car.

I found the sanitary condition of the Town much improved since last year, there having been about 63 cases of typhoid with 4 deaths as compared with 1,102 cases with 73 deaths, during 1909.

I found that two of the mines, viz.: the Temiskaming and the Beaver, have installed a cheap form of portable privy, as advised by the Chief Health Officer and Inspector last year. They have all, so far as I can learn, provided their men with drinking water underground. I visited the interior of a number of the mines and found a very good disposition on the part of the officials to have a care over the sanitary conditions, and am of the opinion that they are beginning to see the advisability, both in the interest of themselves and their employees, of carefully considering the question of good sanitation.

There has been a persistent agitation, chiefly from Cobalt, that a permanent inspector should be appointed for the North country, but inasmuch as Mr. Geo. Young is stationed at North Bay as a permanent man, and from the fact that Cobalt and the Township of Coleman are both organized, and should, with the advice and assistance of our present staff, which have always been freely given, be able to manage their own affairs. I have advised the Minister that such was not necessary, except that we might early next spring send one of our inspectors to Cobalt and vicinity and see that there is enforced a general cleaning up, with a view to the prevention of future outbreaks of typhoid fever.

I have advised the Minister that a sanitary engineer should be appointed to advise municipalities contemplating the installation of sewerage or water systems, and I shall be glad if this Board will see fit to endorse my recommendation.

In addition, I have intimated to the Minister the advisability of having a clause inserted in the Act, providing that municipalities shall before submitting their by-law in respect to such systems have stated in such by-law that all requirements of the Board of Health have been complied with, and that no debentures in respect to such matters shall be valid until such requirements shall have been fulfilled. This will, I believe, have the effect of compelling municipalities to construct proper systems and bring them, as it is intended they should be, under the control of this Board.

The Government has purchased for laboratory purposes a large building, No. 5 Queen's Park (the MacKay residence). In the course of a few months we expect to have our laboratory in these new quarters.

WATER PURIFICATION.

The attached circular, re water purification by means of Chloride of Lime, has been sent to all local health authorities, as well as to the newspapers throughout the province, and there has been an extensive demand for it.

A SIMPLE METHOD OF WATER PURIFICATION.

By G. G. Nasmith, Esq., Ph.D., and R. R. Graham, Esq., M.B.,
Laboratory of the Provincial Board of Health.

A level teaspoonful of chloride of lime should be rubbed into a teacup of water. This solution should be diluted with three cupfuls of water, and a teaspoonful of the whole quantity should be added to each two gallon pail of drinking water. This will give .4 or .5 parts of free chlorine to a million parts of water and will in ten minutes destroy all typhoid and colon bacilli or other dysentery-producing organisms in the water. Moreover, all traces of the chlorine will rapidly disappear.

This method of purification has been tested with Toronto Bay water inoculated with millions of bacteria. Every germ has been destroyed and it has been unnecessary to boil the water.

This method should be very valuable for miners, prospectors, campers, and those living in summer resorts where the condition of the waters might not be above suspicion.

There has been a considerable number of cases of Anterior Poliomyelitis in the Province during the latter part of the summer and early fall. In all cases the physician and health authorities have been notified to isolate the cases and report according to Quarantine Regulations of April last.

There have been treated by the Provincial Board of Health, up to date, 73 cases in all of patients suspected of having Rabies, with good results in all cases.

The various reports, as well as the programme of business and papers relating thereto, are before you.

The following letter refers to the efficiency of the work performed by the officers of the Provincial Police in connection with the Rabies outbreak:

Ottawa, January 4, 1911.

J. E. Rogers, Esq.,
Superintendent Ontario Provincial Police,
Legislative Buildings, Toronto, Ont.

Dear Sir,—I desire to convey to you our appreciation of the assistance given by your force to the officers of this Department in carrying out the provisions of the Ministerial Order prohibiting the movement of dogs from the area recently under quarantine on account of rabies. In this connection I desire particularly to mention the name of Constable W. J. Connor, of Parry Sound, whose services were of the greatest possible value to us.

Yours respectfully,

J. G. Rutherford,
Veterinary Director-General.

Infantile Mortality.

In the Province of Ontario in the year 1908, with an estimated population of 2,226,860, there were 32,714 deaths. Of these 10,530 were infants under 5 years of age, and the first year of life contributed 8,862 of these.

At the meeting of the American Association for the Study and Prevention of Infant Mortality, held at Baltimore in November, 1910, it was shown that the total death rate of all civilized countries amongst infants under one year reached the enormous number of 3,243,958. The flash of the lamp every ten seconds marked the death of a baby. The following lines are adopted from the report of this Association:

" Smallpox, typhoid fever and tuberculosis are dreaded diseases. They receive glaring headlines and front-page newspaper articles, public and private assistance contribute to lessen their ravages, yet the deaths from these diseases combined are insignificant when compared with the death rate of infants.

The chief cause of infant mortality is ignorance, chiefly ignorance of the mother respecting her baby. The cure for it is education. The question will be solved not by philanthropy, or by institution, or by the medical profession, or by the Province, but by an intelligent motherhood.

Its prevention is a social problem of the first magnitude. Whoever will do most for the prevention of at least one-half of this mortality in the next ten years will have accomplished more for the good of the nation than in the prosecution of any other patriotic subject.

Some of the measures to be employed as a basis towards this end are:

1. Prompt registration of births.
2. Education of the parents, and particularly the mothers and prospective mothers, in matters of personal hygiene, of infant hygiene and of infant feeding.
3. The encouragement of maternal nursing.
4. The improvement of social conditions.
5. The public control of sources of infection.
6. The production of clean milk.

Of all the great causes of this mortality the diarrhœal diseases of infancy are the greatest. They are filth diseases. They occur in the greatest number in the first two years of life. Their prevention would eliminate *one-fourth* of the deaths of babies in the earlier years of life."

THE FOLLOWING TABLES SHOW:

(1) Deaths from tuberculosis, by ages, for the years 1903-1908, inclusive.

(2) Comparative tables showing the cases of and deaths from contagious diseases for the years 1908, 1909 and 1910, inclusive.

DEATHS IN ONTARIO FROM TUBERCULOSIS BY AGES, 1903-1908.

Year.	Under 5 years.					5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-59	60-69	70-79	80 and over.	Not given.	Total.	Total from all causes.
	0-1	1	2	3	4																
1903........	140	66	31	16	14	55	78	255	415	358	281	227	182	141	209	167	51	13	24	2,723	29,664
1904........	7	52	26	9	17	52	78	278	417	409	320	267	211	163	257	175	104	13	21	2,877	31,290
1905........	0	55	31	21	18	47	85	266	424	389	277	232	180	161	212	144	79	16	30	2,667	31,371
1906........	251	72	23	14	14	38	74	234	362	362	342	262	201	166	228	169	66	19	14	2,911	32,782
1907........	74	41	27	20	15	44	62	206	745	......	499	......	311	......	227	173	64	9	13	2,530	33,502
1908........	68	46	20	13	13	43	67	216	764	......	479	......	315	......	217	136	70	14	30	2,511	32,714
	540	332	158	93	91	279	444	1,455	3,127	1,518	2,198	988	1,400	631	1,350	964	434	84	132	16,219	191,323

CASES AND DEATHS OF CONTAGIOUS DISEASES REPORTED FOR YEAR 1908, BY MONTHS.

Month.	Municipalities Reporting.	Smallpox.		Scarlatina.		Diphtheria.		Measles.		Whooping Cough.		Typhoid or Malaria.		Tuberculosis.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
January	757	217	0	502	30	270	55	189	2	73	6	61	24	184	184
February	748	112	1	406	19	211	27	185	4	30	8	73	27	184	184
March	760	85	2	529	15	157	27	80	1	54	16	102	12	217	204
April	747	118	1	351	15	165	20	87	1	27	10	121	20	213	197
May	732	30	0	122	10	132	14	108	1	28	5	100	30	187	180
June	721	54	0	208	9	220	29	38	4	57	16	91	21	175	170
July	705	4	0	127	6	124	23	15	3	40	18	118	31	145	140
August	715	6	0	74	2	115	14	3	2	96	19	329	50	145	141
September	725	10	0	167	4	148	35	18	7	135	11	437	83	158	146
October	718	50	0	315	7	318	44	13	1	51	14	500	123	141	137
November	710	134	0	358	10	286	27	13	6	87	14	212	93	116	110
December	718	121	1	354	19	331	52	43	1	76	7	132	49	138	125
		941	5	3,513	146	2,477	367	792	33	754	144	2,276	563	2,103	1,918

CASES AND DEATHS FROM CONTAGIOUS DISEASES REPORTED FOR THE YEAR 1909, BY MONTHS.

Number of Divisions (Municipalities) Reporting.	Months.	Smallpox.		Scarlatina.		Diphtheria.		Measles.		Whooping Cough.		Typhoid.		Tuberculosis.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
731	January	122	0	322	16	341	42	42	2	83	14	72	24	158	151
745	February	183	0	348	18	238	32	23	8	125	15	64	26	146	131
750	March	98	1	197	15	285	33	19	6	48	13	113	34	206	203
745	April	126	0	247	14	148	21	56	9	74	8	63	26	185	178
703	May	87	0	277	16	186	34	140	20	68	14	66	25	175	169
735	June	60	0	266	8	176	21	88	23	29	8	72	22	154	151
481	July	19	0	251	18	156	24	45	18	46	9	126	18	128	104
697	August	22	0	257	14	158	18	39	11	73	18	432	50	139	133
713	September	8	0	248	16	176	28	59	6	47	17	793	102	127	110
753	October	10	0	280	14	217	35	103	20	62	11	310	98	160	153
714	November	90	0	353	19	245	35	132	10	27	6	315	58	130	120
608	December	49	0	415	21	309	63	129	1	50	11	109	35	133	120
		874	1	3,461	189	2,635	386	857	134	732	144	2,535	518	1,841	1,723

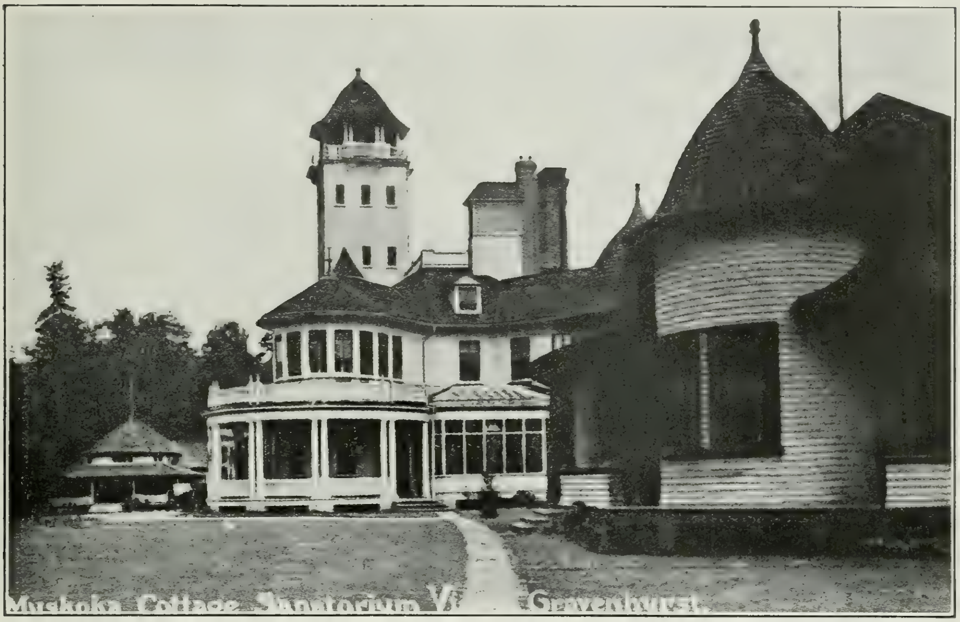
CASES AND DEATHS FROM CONTAGIOUS DISEASES REPORTED FOR THE YEAR 1910, BY MONTHS.

Number of Municipalities Reporting.	Months.	Infantile Paralysis.		Cerebro-spinal Meningitis.		Smallpox.		Scarlatina.		Diphtheria.		Measles.		Whooping Cough.		Typhoid or Malaria.		Tuberculosis.		Total Deaths.
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
715..........	January					98	0	429	23	209	36	967	12	45	2	111	38	151	144	255
717..........	February					46	0	421	19	286	42	937	7	72	12	197	31	153	153	264
705..........	March....................					81	0	357	20	204	28	570	11	24	13	162	45	196	167	284
758..........	April....................					84	0	335	18	149	23	584	25	119	14	72	23	192	168	271
720..........	May....................					48	0	316	25	153	22	564	19	39	8	51	26	151	145	245
715..........	June					55	0	329	18	227	32	794	32	53	5	68	27	172	157	271
537..........	July....................					59	0	204	28	178	17	248	23	25	12	81	16	115	102	198
625..........	August					17	1	144	10	178	29	49	12	20	12	339	48	120	107	219
434..........	September....................					5	0	123	3	227	23	45	5	14	5	295	38	75	70	144
650..........	October..........	46	8	0	0	5	0	306	14	261	21	49	4	11	0	416	53	132	126	226
709..........	November........	21	5	5	4	28	0	340	15	224	14	65	5	23	5	266	50	105	83	181
725..........	December........	14	2	10	8	33	0	494	15	263	36	339	7	28	6	134	30	113	77	181
		81	15	15	12	559	1	3,798	208	2,559	323	5,211	162	473	94	2,192	425	1,675	1,499	2,739

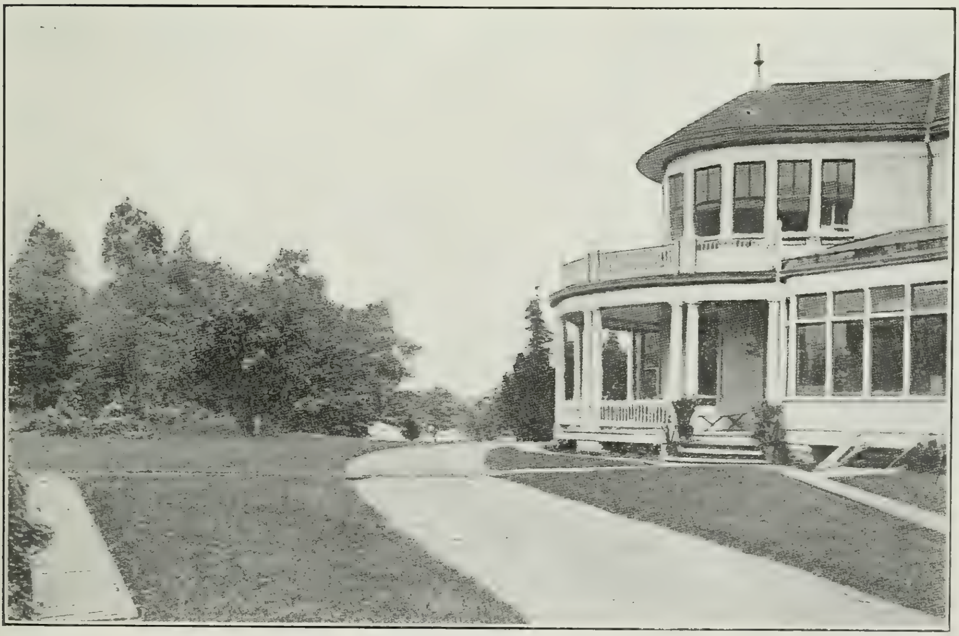
Main Building. Free Hospital for Tuberculosis, Gravenhurst.

Kendal Pavilion. Free Hospital for Tuberculosis.

Interior Kendal Pavilion. Free Hospital for Tuberculosis, Gravenhurst.



Muskoka Cottage Sanatorium, Gravenhurst.

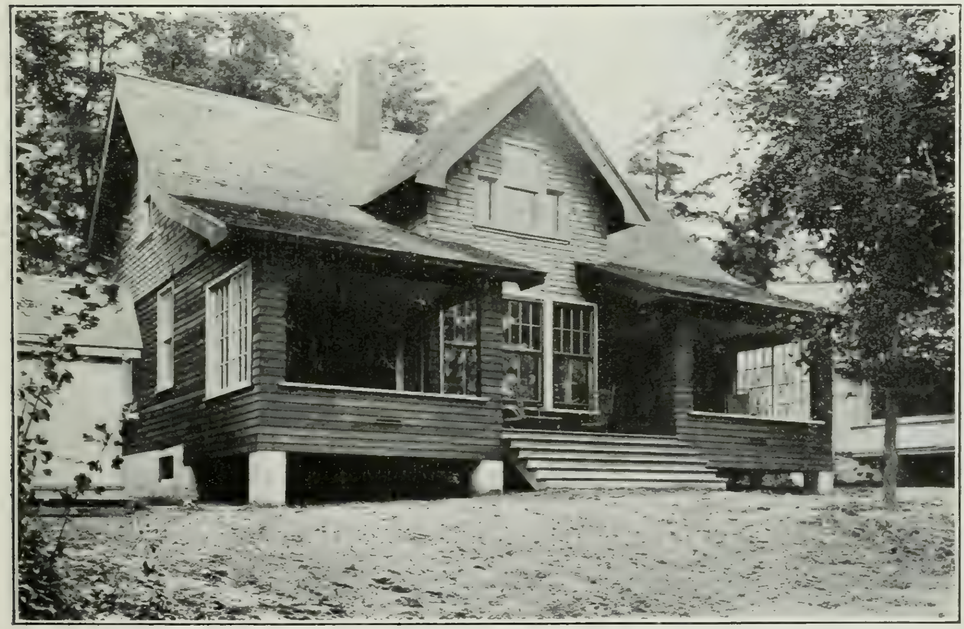


Approach to Main Building. Lake in Distance. Muskoka Cottage Sanatorium.

Entrance to Main Building, Muskoka Cottage Sanatorium.

Approach to East Lawn. Guests' Cottage. Muskoka Cottage Sanatorium.

Ladies' East Lawn, with Cottages, Muskoka Cottage Sanatorium.



Cottage. Muskoka Cottage Sanatorium.

Cottage. Muskoka Cottage Sanatorium.

Cottage. Muskoka Cottage Sanatorium.

Reports of Medical Inspector, R. W. Bell, M.D.

REPORT *RE* EXTENSION OF WATER INTAKE PIPE, PORT ARTHUR.

(December 14th, 1909.)

To the Chairman and Members of the Provincial Board of Health.

GENTLEMEN,—Port Arthur desiring to extend the intake water pipe of that city and having submitted plans, your Secretary instructed me to report thereon. I visited Port Arthur on December 9th inst., and looked over the situation with Alderman McGovern, Chairman of the Water Commissioners, and Dr. Laurie, M. H. O.

The location and conditions surrounding the water works system of this city are familiar to your Board and were fully reported on by me in March, 1905 (see Report, page 105). Prior to that date the water supply was derived from Current River, which empties into Thunder Bay a short distance north of the city, and was supplied to the lower section by gravitation, the upper section being supplied from Thunder Bay in barrels by water carriers. At the date mentioned an intake pipe was projected out into the Bay, about 1,500 feet from the power house, at the mouth of Current River. This was into about 16 feet of water and to the north of the river flow, which would aid in protecting it from a possibility of pollution from the city sewage, which is discharged into the Bay from three sewers emptying at the foot of John and Wilson Streets and the mouth of McVicar Creek, the latter being nearest to and distant from the intake about 9,800 feet. The present extension requiring an entirely new line of pipe is called for because of a large dry dock which is under construction on the northerly side of the mouth of Current Rver. The proposed new intake will extend out about 3,500 feet into 30 feet of water, but to the southerly side of the flow of Current River, thus losing such protection from city sewage as the flow of the river might give. About 1,000 feet beyond this intake point a breakwater will be erected as a protection to the entrance to the dry dock, and when built it is proposed to extend the intake pipe beyond the breakwater.

At the present time there is practically no difference in regard to the safety of the water from pollution as between the present and proposed points of intake. As there are no habitations along Current River and the property adjoining its mouth is reserved for a park, while the north section of the city is very sparsely populated, and not drained directly into the Bay, the danger of pollution from the immediate neighborhood is reduced to a minimum, but with the building of the dock and extension of shipping in that direction, as also the growth of the city northwards requiring drainage, the danger will be increased. I was assured over and over again by the city authorities that samples of water from the locality of the present intake have been frequently examined and have always been absolutely free from evidence of contamination.

I cannot help fearing, however, that with the sewage of the combined cities of Port Arthur and Fort William adjoining, with a population now of 30,000 and rapidly increasing, the whole sewage of the latter pouring into the Bay from the Kaministiqua, Neebing and McIntyre Rivers to the south of Port Arthur, and all within a distance of about four miles, there will be considerable risk of contamination of the water at point of intake, especially after a south or south-westerly wind has been blowing for a few hours. In fact I have been informed by the best of authority that "the reddish water of the 'Kam' has been readily detected at this point" under conditions mentioned.

REPORT *RE* PROPOSED WATER AND SEWERAGE SYSTEMS AT NEPIGON.

(December 14th, 1909.)

To the Chairman and Members of the Provincial Board of Health.

GENTLEMEN,—A proposition having been submitted by the Township of Nepigon for the installation of a Water and Sewerage System in the Village of Nepigon, your Secretary requested me to visit that place, which I did on Friday, December 10th inst.

LOCATION.

Nepigon is an incorporated village of between 300 and 400 inhabitants, situated on the west bank of the Nepigon River, and about four miles north of Lake Superior, into which the river empties. The river is deep and wide, with banks from 40 to 70 feet high, and a current of five or six miles an hour. Nearly the whole population is settled in the village, which consists of several places of business, a few residences and two large hotels with all modern conveniences, and has recently come into greater prominence as the headquarters of the staff of one of the large contracting firms on the National Transcontinental Railway, which crosses about 90 miles north, but at this point engineering offices are established, and from here supplies are sent in *via* the river, etc. It is likely to become a favorite resort for those visiting the famous fishing waters of Lake Nepigon and river.

WATER.

The C. P. Ry. runs north and south through the village, mostly all houses being between it and the river, and having an elevated water tank of large dimensions, the hotels and a few others now get a supply of water from it, and with the consent of the railway it is proposed to extend this into a municipal system. The water supply is now and will continue to be pumped from a creek about 25 or 30 feet wide and four or five feet deep, with high wooded banks, in southwestern part of the village. There are no habitations along this stream above the village, and but three in the village and back from 100 to 200 feet from it. Drainage from these will not be permitted to the creek, nor will pit closets be allowed in this locality. The use of this water supply, I think, would be quite permissible. About thirty families all told will be connected with it.

SEWERAGE.

One of the hotels, having trouble in constantly pumping out their two cesspools, prepared to put in a tile drain to the Nepigon River, about 1,000 feet distant, and this led to the proposed municipal system, with this sewer extended to a point 700 feet further down the stream, into which it would be discharged beyond the old C. P. R. wharf and beyond any village residences. The only inhabitants on the lower river are three Indian families, one and a half miles distant on the opposite bank. Not more than 20 connections are likely to be made with the sewer.

As the place is small and not likely to increase much for many years, the pollution of this large stream will be almost *nil*. I think both the water and sewerage systems as proposed might be approved of, at least for the present, with the proviso that either or both shall be altered to the satisfaction of your Board in the future should you deem it necessary.

REPORT *RE* WATER WORKS SYSTEM AT GRAVENHURST.

(December 21st, 1909.)

To the Chairman and Members Provincial Board of Health, Ontario.

GENTLEMEN,—On June 1st last Gravenhurst submitted for your approval a proposed system of Water Works for that town, prepared by Willis Chipman, Esq., some three years before, and accompanied by a plan in the form only of a pencil tracing. Deeming further information necessary, your approval was withheld, with the object of an officer of your Board reporting thereon, and by request the tracing was returned to Gravenhurst on June 10th.

Owing to my almost constant absence on other duties and the confusion of papers, etc., in the office due to the fire, this matter was not taken up during the summer. The application recently again coming to light, your Secretary requested me to visit Gravenhurst and report thereon.

Yesterday, 20th inst., I visited the town and was shown over the situation by Councillor Mowry and Engineer Briddick of the Water Works Power House.

I found the work of installing the system had been gone on with without your approval, the reason given by Town Clerk Cross being that their contracts had been let and they were informed no one from this Board could visit them for a couple of months, and they could not wait. The work is now virtually completed, and water turned on last week for trial, and yesterday for continuous use.

It is pumped from Gull Lake, on the eastern outskirts of the town, by two 65 horse power electric pumps, and distributed through about three miles of 10 and 8 inch mains. Gull Lake lies to the east of the town and Muskoka Lake to the west, the former being 88 feet higher than the latter. From Muskoka Street, their main business street, and 20 feet above Gull Lake, there is a slope towards each lake. Gull Lake is about 4 miles long and averages less than a mile in width, with high rocky shores, and has no visible inlet, being probably fed by springs. Few or no permanent habitations are around it, but there are a number of summer cottages. There are no residences close to its shores in town, but there are several boat houses and a good sized boat livery quite close to the intake, which only extends out 300 feet, and from these there is great danger of pollution.

Mr. Chipman's report, placing the pump house at its present location, recommended that water be taken not less than 1,200 feet from the shore line, but as the lake is not more than 1,200 feet wide at this point, he must have contemplated extending it a considerable distance down the lake, to a wider part. However, this advice has not been taken.

At the location of the intake pipe the water is quite shallow for about 200 feet from shore, when it rapidly drops to a depth of 20 feet, as deep as any part of the lake, and here the water is taken.

Much detailed information regarding the pumps, hydrants, water pressure, etc., was given me, but not here necessary to report.

The town has no sewerage system, but has many cesspools and pit closets, all in a coarse sandy soil. These should be abolished as soon as possible, so as to prevent any chance of drainage into the water supply. It is ultimately contemplated, I was informed, to run sewers to the south of the town to White Lake, thence discharging into the Severn waters.

With an extension of the intake to the distance suggested by Mr. Chipman, a close supervision of the boat houses, and complete control of the shore line of the lake, I think a satisfactory supply of water should be obtainable.

REPORT *RE* PROPOSED WATER WORKS SYSTEM AT LATCHFORD.

(April 15th, 1910.)

To the Chairman and Members Provincial Board of Health, Ontario.

Gentlemen,—The Town of Latchford having submitted plans for a proposed water supply, I visited that place by instructions from your Secretary on April 12th inst., and found the contract had already been let and work was in progress.

The town is situated on high ground in a bend of the Montreal River, at the foot of Bay Lake.

About two and a half miles to the west is Animi-Nipissing Lake, from which it is intended to draw the water supply. This lake is narrow, but several miles long, with a good depth of water. There are no habitations on its shores, nor are there likely to be any. It has two outlets. The main one is from the south end into the Temagami Lakes, and a smaller one (dry in summer) from the north end into Bay Lake. The proposition is to lay the main pipe in the bed of this smaller stream to Bay Lake, thence along its westerly shore for 2,000 feet, then across the lake a few hundred feet to Grassy Point, and along the easterly shore about 7,000 feet, in all about four miles to the foot of 3rd Avenue, from which point pipes will be distributed through several streets in town. The main along Bay Lake will be submerged in two feet of water at present, and after a dam is erected across the river in town by the Government, for which a contract has been let, the main will be in about seven feet of water.

Animi-Nipissing Lake is about 209 feet above Bay Lake and 180 feet above the centre of the town, so the supply will be got by gravitation. Your Bacteriologist has examined samples of water from this proposed supply, and reported favorably thereon. I think there can be no objections to granting approval for this undertaking.

I regret no provision is made for a sewer system for the town, as it will be doubly required after the water system is in operation. The contractor, however, told me that, anticipating the necessity for sewers being required ere long, he was taking all necessary levels and noting the nature of the excavating required, with the idea of taking hold of the work should opportunity offer.

REPORT *RE* PROPOSED WATER SYSTEM AT COLDWATER.

(July 7th, 1910.)

To the Chairman and Members, Provincial Board of Health, Ontario.

GENTLEMEN,—The Corporation of the Village of Coldwater having submitted for your approval plans and specifications for a water system, I visited that place on July 6th inst., and with Councillor Manning looked over the proposed source of supply. The intention is to take water from three small creeks arising from springs about one and a quarter miles south-west of the village. Each creek is to be dammed and the retained water piped into a reservoir nearby, at an elevation of 240 feet above the centre of the village, and thence supplied by gravitation. The springs and creeks are as described in the reference, above the points of intake, surrounded by brush and small timber, and no cultivation in the immediate neighborhood to contaminate them. The municipality has purchased ten acres surrounding the source of supply for its protection, and the ground about the reservoir, collecting pipes, and dams is to be thoroughly cleared of all bush, stumps, and vegetation, also a protecting ditch from surface drainage to be around the upper side of reservoir. The water from all three creeks has been examined at your laboratory and pronounced on favorably. The engineers were at work laying out the site of the reservoir at the time of my visit. The source of supply being favorable. I have no hesitation in recommending approval of it according to the plans presented.

REPORT *RE* POLLUTION OF TEMAGAMI WATER SUPPLY.

(April 15th, 1910.)

To the Chairman and Members Provincial Board of Health, Ontario.

GENTLEMEN,—A petition having been received from the residents of the town of Temagami asking for an investigation into the pollution of their water supply, your Secretary instructed me to visit that place on April 12th inst., and report thereon.

The town is unorganized, and has a resident population of about fifty, but there is a tourist hotel there at the entrance to Temagami Lake, which increases the population considerably, through transient travel during the summer and hunting seasons.

There is a small swamp on the town site a few yards west of the T. & N. O. Ry. station, and immediately around it are the few houses in the place, all draining into the swamp. The railway station has a septic tank, with drain tile in a bed of gravel, but the liquid effluent reaches the swamp only a few feet away, as does also the drainage from the railway restaurant, station agent's and sectionman's house, several stores and residences, all with pit closets, etc., while from the hotel the discharge from flush closet, sinks and laundry, with soakage from a stable manure pile, all go directly into it. The railway company has recently dug an open drain through and from the swamp only a few yards to the lake shore, within a stone's-throw of the hotel. This is into the end of the north-east arm of Lake Temagami, where the water is quite shallow and no current. Several steamers daily during the season churn up this water as they approach or leave a wharf, directly in front of the hotel. The hotel has an intake pipe taking water about

25 feet from the outlet of the drain, but they have the pipe on hand to extend it 1,000 feet down the lake, while the railway company have an intake about 50 yards distant in the blind end of the bay, and from there fill their tank, from which trains, station, restaurant and several residences are supplied. These supplies cannot possibly be without pollution. I have called attention to them several times in past years, but the danger from direct pollution is now increased by the greater flow from the recently opened drain.

I have been informed by residents there, and this is confirmed by a recent letter from Mr. MacDonald, Crown Timber Agent to the Forest and Lands Department, that the natural outflow from this swamp was to the east, to Snake Lake, about 500 yards distant, but this has been cut off by the railway embankment and turned into Lake Temagami.

The remedy appears to be to restore the natural outlet underneath the railway track, thence to Snake Lake, which discharges through an uninhabited territory by several small lakes and streams away from Temagami and towards Lake Temiskamingue.

In addition, the hotel should provide some method of treating its sewage, and as I understand nearly all the town is railway owned, they might unite in some such disposal of the sewage as a competent engineer would suggest.

A fine water supply for drinking purposes, slightly mineralized with iron, can be obtained by gravitation from two springs near the railway track, about 500 or 600 yards distant to the north.

In the interest of the general public, I would suggest that the deposit of all sewage into the swamp mentioned, or into the lake in the neighborhood of Temagami Station be absolutely prohibited.

REPORT *RE* SEWERS AT OSHAWA.

(July 7th, 1910.)

To the Chairman and Members, Provincial Board of Health, Ontario.

GENTLEMEN,—At your meeting in December last you approved of plans for a sewage disposal plant in the Town of Oshawa on what is known as the Ritson farm in the eastern part of the town, the effluent being discharged into a small creek near the present outfall.

Owing to pending suits for damages, and which are likely to be continued, even with the approved change and possibly successful, the Corporation are now presenting amended plans for approval, wherein it is proposed to pipe the sewage across several farms through which they now have the right granted, to a point about two-thirds of a mile further south on the Henry farm, which it is intended to purchase, retaining such portion as may be required for liquifying tanks, selling the balance without recourse against the Corporation for damages. The effluent will be discharged into the same creek as previously approved of and thence flow into the marsh shown on the plan adjoining the lake shore. I looked over the situation on 5th July inst. and recommend the amended plans being approved of, subject to any future change which you may require should the effluent ever prove a nuisance.

REPORT *RE* POLLUTION OF STONEY LAKE.

(July 28th, 1910.)

To the Chairman and Members, Provincial Board of Health of Ontario.

Gentlemen,—As instructed by you at your meeting on July 12th, I visited Stoney Lake on 25th and 26th inst. to note the pollution of its waters in the neighbourhood of certain summer resorts and report thereon, especially with reference to its effect on the water supply of the City of Peterborough.

My attention was directed particularly to the hotels at Burleigh Falls, Mount Julian and Viamede, on the north side of the lake and Victoria Hotel on the south side. There were no complaints about any others. Each of these will accommodate from forty to fifty guests and Viamede probably double those numbers. All except Viamede are open the whole year, but only Burleigh need be considered excepting in summer.

All pour their whole domestic sewage into the lake, and all have flush closets. At Burleigh and Viamede large cement tanks have been erected near the shore, two compartments each above ground. At the former they were both full and the sewage running over the top and down the sides, thence over the rocks to the lake close to the steamer wharf. Only a few loose boards covered one portion of the tank, the other being exposed to the hot sun. The stench here was unbearable for a considerable distance, and was quite perceptible at the wharf. The polluted water here is carried directly down the lake past several cottages.

At Viamede the tank was well covered and but little odor noted, but there was a constant discharge of sewage through a galvanized iron pipe about 20 feet long into a few inches of water, and here also only a few yards from the wharf.

Close by, Mt. Julian Hotel discharges its sewage into an open trench leading to the lake beside the wharf.

Drinking water for both these hotels is obtained from a spring, but for all other purposes is pumped from the lake within 50 or 60 yards of the sewer outlets.

Across the lake at the Victoria Hotel I found the drinking water obtained from a spring a few feet from the shore, and which is undoubtedly contaminated from a barnyard about 100 yards distant. Water for all other domestic use is pumped from the lake directly in front of the hotel and close to a discharge from a kitchen sewer, while only a few feet distant is a cesspool receiving the closet discharge within ten feet of the lake shore and behind an "L" shaped wharf from which it cannot escape without passing over the intake.

The pollution from these resorts is considerable during the tourist season, as all are well patronized. Besides a couple of other hotels and several large boarding-houses, there are about 200 cottages occupied on this lake for a couple of months each year, but vigorous action and remonstrance on the part of the Water Commissioners of Peterborough have had the effect of bringing about satisfactory sanitary conditions everywhere, except at the places named and about a dozen cottages.

It is difficult to say how far this pollution may affect the City of Peterborough supply of water, as it has to pass through from twelve to fifteen miles of lake and seven or eight miles of river before reaching the city intake. However, there is not a shadow of doubt but it is a menace and danger to many residents on the lake, and especially to the occupants of the resorts named. A greater danger to Peterborough's water supply I think lies in the open closets on the steamboats plying up and down the lakes, river and canal directly to the city.

REPORT *RE* SEWER AT THOROLD.

(August 13th, 1910.)

To the Chairman and Members, Provincial Board of Health, Ontario.

GENTLEMEN,—The Municipality of Thorold having applied for approval of plan for extension of sewer, I visited that town on Friday, 12th inst., and looked over the proposed change with Mayor McCullough and Mr. Munro.

At present short sewers, each one block long, run west on Claremont, Albert and Regent Streets and cross Front Street, emptying into the old Welland Canal directly back of the shops on the west side of Front Street. These were put in for surface drainage, etc., but a few house connections have been made with them. Most of the business houses on Front Street, west side, have private drains into the Canal.

The proposed change is to deepen the sewers on the streets named and have them intercepted by a new sewer down Front Street for two blocks north from Claremont to Regent Street, and there discharge into the Canal. Even with a possible further extension to accommodate the south-eastern section of the town, there will not be probably more than fifty connections. Most all factories and others on bank of the Canal have their closets placed directly over it.

There is no water taken from the old canal below Thorold for domestic use. It is not even used for navigation, but only for power purposes, and there is considerable current flowing all the way to Lake Ontario—eight miles distant. The City of St. Catharines, I understand, discharges its sewage into this same canal about three miles further down.

I am informed that the Dominion Government Superintendent of the Canal has given his consent to its reception of the sewage, and, if so, I can see no special objection against it.

REPORT *RE* SEDIMENTATION TANK AT TRENTON.

(October 25th, 1910.)

To the Chairman and Members, Provincial Board of Health, Ontario.

GENTLEMEN,—A complaint having been made by the I.O.D.E. *re* the location of a Sedimentation Tank in Trenton, on a suggestion from your Secretary I went to that town and found as follows:

The tank now under construction is placed in the centre of a non-travelled street, close to and terminating at the bay, and adjoining a small triangular proposed park, in which the I.O.D.E. are interested. The tank is in accordance with specifications approved of by your Board, and as desired by the local authorities. The top will be one foot below street level, covered with earth and sodded. In itself probably not a nuisance and certainly not unsightly, but I suggested that when the park is improved and sodded a flower bed on top of the tank would be appropriate and pleasing to the ladies, etc.

The outlet pipe from tank, however, will only extend into the bay about 15 or 20 feet, and into very shallow water. With a wind blowing inshore I fear there will be a more or less offensive odor, and there will likely be some deposit which may become offensive along the shore line. The remedy is to extend the outlet pipe about 200 or 300 yards east into the current of the river, should the present arrangement prove a nuisance.

REPORT *RE* SEWERS IN SANDWICH EAST.

(November 5th, 1910.)

To the Chairman and Members, Provincial Board of Health, Ontario.

Gentlemen,—A complaint from Walkerville (one oft repeated) *re* pollution of the town's water supply by sewers in Sandwich East having again been made, I visited the locality on November 3rd. The Walkerville water supply is obtained from the Detroit River opposite the centre of the town, 200 feet from shore and in 50 feet of water. The town sewers empty into the river below the intake.

Sandwich East, a suburb of Walkerville, has a population of several hundred and is rapidly growing, mostly working people and French Canadians.

Water is obtained from the Walkerville System, a privately owned company. There are no civic sewers, but Jenkins Creek, a small stream, especially in summer, runs north across the village and empties into the river about 1,500 feet above the Walkerville intake. Many drains and private sewers empty into the creek which now contains little but sewage. It is about 1½ blocks east of the boundary between the municipalities. One block further east a tile sewer two blocks long has recently been put in, and it is the cause of the present complaint. It is 4½ feet deep and many connections are being made with it for surface, cellar and closet drainage. The Ford Motor Works, to employ a large number of hands, is being erected in Sandwich East on river bank and closets over the river. There are many private sewers discharging into the river for two or three miles up stream.

As a solution of the difficulty I suggest that either Sandwich East should connect its sewers with the Walkerville main and all empty below the intake, or, better, Windsor and Walkerville should unite their water systems (for which I believe provision has been made) and take their water supply up the river three or four miles, beyond all sewers, near Lake St. Clair.

REPORT *RE* POLLUTION OF RIVER AT BANCROFT.

(November 18th, 1910.)

To the Chairmen and Members, Provincial Board of Health, Ontario.

Gentlemen,—Owing to a complaint from Mr. Farnham, a lawyer in Bancroft, *re* a sewer from the Bancroft House emptying into the river and creating a nuisance, your Secretary instructed me to visit that place and investigate. This I did on November 16th inst., and calling on Mr. Farnham was informed that he was acting for a client, Mr. Woods, who had a wagon shop opposite the Bancroft House, and under whose shop the drain passed to the river a few yards beyond. He pronounced the drain a nuisance himself, stating that because of a dam a few yards below, the filth was backed up and deposited on the shore, creating a bad smell in summer evenings, also that some four or five families took water more or less regularly below the dam. I may say here that I later visited all these families and found only one occasionally took a few pails for washing purposes and had no complaint to make.

I visited the location and found a wooden box drain from the hotel crossed the street and emptied into the river about 12 feet from shore, where 80 to 100 feet wide and very little current, as the dam tight about 20 yards further down. I soon found the drain was not the only source of pollution, as about 20 feet from it there was a closet on the bank of the stream, without either pit or box, the contents of which were washed into the water. On the opposite shore was a large manure pile, and about 100 yards up stream were two more, and right here I was informed a large number of filthy hides were frequently washed and washings discharged into the river.

Mr. Wood, Mr. Farnham's client, said he had no complaint to make, although his shop was over the drain and close to its outlet. Only once (last summer) he found a bad smell and spoke to Mr. Kennedy, proprietor of the hotel, who immediately remedied the matter by putting on an extra length of pipe and out into the water. I learned from the Board of Health that there is but one resident for many miles below the dam on the river bank, and he does not use the water, as he has a good well and the banks on his farm are too steep for his stock to reach the water.

I think the whole matter can be remedied by the extension of the hotel sewer a few yards down stream alongside of a crib to discharge below the dam (and this Mr. Kennedy is willing to do), as there is no one to be affected by it, and also the abolition of the other nuisances enumerated.

As Mr. Farnham proposed prosecuting the hotel-keeper for creating a nuisance if not abated immediately, I suggested that he prosecute the other offenders also, but this he declined to do. I suggested deferring action until the Provincial Board of Health could give permission for discharge of the drain below the dam, but he was reluctant.

I saw several members of the Local Board of Health and advised action *re* removal of closet, manure piles and hide washing nuisance, but they rather demur at ordering these remedies by their fellow citizens. I also advised them to apply to your Board for permission to have the sewer discharge as indicated below the dam, and, as a special case, I recommend it.

REPORT *RE* PROPOSED CHANGE IN OUTLET OF SEWER AT COLLINGWOOD.

(November 22nd, 1910.)

To the Chairman and Members, Provincial Board of Health, Ontario.

Gentlemen,—By direction of your Secretary I looked over the proposed change in sewer in Collingwood, and beg to report that I find a sewer from Hurontario Street through the Ship Company's property has been cut off by a new dry dock and changed into a wooden box sewer and carried further out and a little to the west, but it has burst and the sewage was escaping freely over the surface of the ground just north of the G.T.R. tracks. It is now proposed to carry it further out alongside of another dry dock soon to be built, and discharge the raw sewage into the bay at its outer end, or, as an alternative scheme, put in a new sewer westward along north side of G.T.R. tracks two blocks to Maple St. by the Ship Company, and two blocks further by the town, to the present septic tanks and from them discharge into the bay.

I do not approve of the first proposition, and I think the second an unnecessary expense. Hurontario St., the business street of the town, running north and south terminates at north end at the Ship Company's property near the bay. Huron and 1st Streets, being continuous, run east and west respectively from Hurontario St. a short block south of the end of the latter street. The Globe Hotel is on the north-east corner, and one small double house is opposite its west side, and these alone drain into the sewer north of Huron and 1st Streets. A sewer now runs west on 1st Street four blocks and thence north to the septic tanks, and into this the Hurontario Street sewer discharges a portion of its flow, but Mr. Smith, manager of the Ship Company, says the main outlet is north through their premises, although Dr. McKay, M.H.O., thinks this only an overflow section. On inquiry I find there is no cellar under the Globe Hotel. There is a boiler room in rear towards east end. Closets are all on ground floor or above. In the double house opposite, one not at present occupied, there is a flush closet in one side only. These are owned by the proprietor of the Globe Hotel.

I advise placing a round bend on the Hurontario Street sewer at the corner and sending all its sewage west along 1st Street, if 1st Street sewer is large enough to carry it, and if not, then enlarge it, to the tank. Close the present short end north of the corner on Hurontario Street and connect the Globe Hotel and opposite house by new short sewers to 1st Street sewer just west of the proposed bend. Open up a closed connection from the boiler-room and a closet near east end of the hotel to Huron Street sewer which is continued into 1st Street. Mr. Kennedy is afraid the grade will not be enough to the junction of Hurontario and 1st Streets, but as his closets are all above the surface of the ground and no cellar to drain, there must be sufficient, as he is no lower than buildings four blocks away along all streets.

The only fear is that the 1st Street sewer is not now large enough for the total flow, but it would cost less to enlarge it I think than to build a new sewer along the north side of the G.T.R. tracks. The Town Engineer, who was absent, however, will be consulted on his return.

REPORT *RE* SEWER NUISANCE AT ORANGEVILLE.

(December 23rd, 1910.)

To the Secretary, Provincial Board of Health, Ontario.

SIR,—As instructed by you, I investigated a complaint from Orangeville *re* entrance of sewer gas into several houses creating a nuisance, and find as follows:

Along south side 1st Avenue for one block east of the Methodist Church runs a tile sewer (6-inch I am told) thence along west side of 2nd Street to and across 2nd Avenue (the last few yards 8-inch tile) and there empties into a little rivulet which runs east a half mile to a small pond. This sewer, only intended for surface or cellar drainage, has been tapped by about a half-dozen houses for closet, bath and sink connection, and, as the cellar connections are not trapped, there is nothing to prevent the return of sewer gas and the complaint is well founded. At the outlet of this sewer on the roadside was to be seen fecal matter and toilet paper, and until a few months ago this had been discharged down an open drain on the street side for half a block back. The whole situation is most unsanitary and a great source of danger to the occupants of houses with untrapped cellar pipes, as the connections have been made into an unsuitable sewer without proper method of disposal. These connections I am informed were all made without the consent of the M. H. O. or Local Board of Health. The present M. H. O. called the attention of the Municipal authorities to the matter, but so far without any attempt to remedy it. In warm weather it certainly must be a public nuisance and danger because of the open discharge on the street side.

REPORT *RE* ENLARGEMENT OF CEMETERY AT STRATHROY.

(July 9th, 1910.)

To the Chairman and Members, Provincial Board of Health, Ontario.

Gentlemen,—An application, with plan, etc., for enlargement of cemetery at Strathroy having been submitted for your approval, I visited that town on July 8th inst., and with Mr. R. Diprose, Town Clerk, looked over the situation.

The present cemetery is in the western section of the town and well isolated from all residences. The proposed addition lies to the west and is on high ground, very irregular in shape, and comprises about thirteen acres. The irregularity is caused by following the edge of the high ground from which there is a sudden drop of ten to twenty feet to the lower level. All the adjoining low land is used for pasturage, and the higher section naturally belongs to the cemetery. As there are no residences nearby, nor any to be affected by drainage therefrom, the sanitary conditions being favorable, I recommend that the application be approved of.

REPORT *RE* BASEMENT WORKROOMS.

(October 18th, 1910.)

To the Chairman and Members, Provincial Board of Health, Ontario.

Gentlemen,—On request from the Factories Inspection Branch, your Secretary instructed me to accompany Mr. Holmes, one of the Inspectors, on a visit to some basement workrooms in Toronto. Several were inspected, principally those of tailor shops on Yonge Street. All were badly ventilated, poorly lighted from small windows and gratings in the edge of the sidewalk and through which came the dust from the streets, the work hands getting the full benefit of it as they sat on tables close to these inlets to get what little natural light they could, this being generally supplemented by artificial light at all hours of the day. Some of these were virtually storerooms with broken floors, fuel, packing cases and other refuse strewn about, with one end cleared or partially partitioned off for a workshop.

Both males and females were found who worked all day in these underground cellars and, although no overcrowding seen, they were most undesirable and unsanitary in almost every respect, and quite unfit for workrooms from a health point of view. I have reason to believe that immediate action will be taken by the Chief Factory Inspector to require the vacating of these premises and the provision of suitable workrooms above ground.

REPORT *RE* SCARLET FEVER AT DEAF AND DUMB INSTITUTE, BELLEVILLE.

(August 9th, 1910.)

To the Chairman and Members, Provincial Board of Health, Ontario.

GENTLEMEN,—Items having recently appeared in several newspapers, telegraphed from St. Thomas, *re* scarlet fever in that city having been brought there from the Deaf and Dumb Institute at Belleville, and reflecting on its management, the Deputy Minister of Education personally appeared and requested an investigation on behalf of the Department and the Superintendent of the Institute.

On the 5th inst. I visited St. Thomas to find out exactly the nature of the complaints, as the newspaper reports stated that the Local Board of Health had ordered the matter, with some correspondence, to be referred to the Provincial Board of Health. The minutes of the Board did not show any such order, but only the ordinary monthly report of the Medical Health Officer, in which he referred to the scarlet fever, and a copy was transmitted to the City Council.

However, Mr. W. J. Shaw, Sanitary Inspector, furnished me with a copy of his report to the Local Board, also copies of letter from Dr. Charteris, M. H. O., Chatham Township, Dr. Coughlin, Supt. Deaf and Dumb Institute, Belleville, and Mr. John Jagoe, St. Thomas, father of a child who had attended the Institute and another of whose children had died from scarlet fever. All newspaper clippings, reports and correspondence appended.

A short statement, however, shows that a large number of cases of scarlet fever occurred in the Deaf and Dumb Institute during the past nine months, most of them last Fall, when Mr. Jagoe's daughter, aged six and a half years, had it. She only returned home on June 14th. Two weeks later her brother, two and a half years, developed the disease and died in eleven days.

Toys, books, etc., from the child's trunk from the Institute were blamed for carrying the infection, and gross carelessness, etc., attributed to the Institute authorities for allowing these things to be sent home, although admitted that in the trunk was a printed slip, stating that everything therein had been thoroughly fumigated, and it would be well to hang clothing outside for a time exposed to air and sunlight.

A letter from Dr. Charteris, M. H. O., Chatham Township, to Mr. Shaw told of an almost identical occurrence in that township, and commented severely on the authorities of the Institute, going so far as to characterize it as "criminal negligence."

Dr. McKillop, M. H. O., St. Thomas, however, was not prepared to say he believed the Jagoe child contracted it from his sister or articles in her trunk, as there were other cases in St. Thomas at the same time from which it might have arisen, and in no way connected with the Institute.

The assumption of Mr. Jagoe and others at St. Thomas was that, while the toys, etc., of the other children had been burned, by an oversight, those of his child had been sent home and conveyed the disease, notwithstanding they had been thoroughly fumigated and disinfected.

Visiting the Deaf and Dumb Institute at Belleville on the 8th inst., I received a statement concerning the scarlet fever epidemic from Dr. Coughlin, Superintendent, which after considerable questioning was absolutely corroborated by at least a dozen of the teachers who were present.

It appears there have been sixty-eight cases, mostly last Fall, only four this year—April 2, May 1, June 1.

The first case developed on October 13th last. Immediately on the appearance of illness every patient was removed, with mattress, bedding, etc., to a suspect ward, and, if scarlet fever developed, was then at once, with bedding, etc., taken to hospital in a separate building.

No patients returned to the Institution in less than six weeks, and then only after a thorough disinfecting bath and fumigation of clothing, and none returned at all after December 24th.

There had been repeated fumigation of dormitories and school rooms, dining-rooms, etc., all Fall. (See detailed statement attached.)

The school closed in June one week earlier than usual, in order to clean up and fumigate everything before the pupils went home. On June 8th and 9th contents were removed from all trunks and fumigated in the dormitories. Again on June 12th and 13th all trunks on being packed had contents well sprinkled with a 50 per cent. commercial formaldehyde, and a slip so stating placed in each trunk, with request to parents to air and sun the contents as soon as opened.

Orders were issued by the Superintendent to destroy or burn all toys, dolls, albums, picture cards, etc., and this was done so far as known, but it is just possible some pupils may have secreted articles and put them in their own or other trunks after the disinfecting process and before being locked up. As there were over 250 trunks to be attended to, it was no easy matter to watch all and prevent this possibly unsuspected hiding of treasured articles by pupils. However, the formaldehyde disinfection they got in the trunks on the way home should have been sufficient.

The Jagoe child from St. Thomas had scarlet fever last Fall, was isolated six weeks, then bathed with disinfectants, and returned to the Institution from hospital. She was visited at Christmas by her parents, who brought her toys and furs, and again at Easter. The particular toy and furs blamed were never exposed to infection nor out of her trunk during the spring epidemic, and were *twice* fumigated before going home.

The Meredith child, from Chatham Township, supposed by Dr. Charteris to have brought the disease there, is declared by Dr. Coughlin and also by Dr. Boyce, Physician to the Institution, not to have had scarlet fever at all, but measles last November and German measles on May 29th, present year, when several others had mild attacks but not put to bed. However, all their trunks and contents were disinfected twice the same as others before going home.

Neither the Jagoe nor Meredith child (twelve years old) were in the same dormitory or classes as others who developed scarlet fever, nor in any way associating with them. Both Dr. Coughlin and Dr. Boyce declare that all children were absolutely clear and free of disease before leaving, and as thoroughly disinfected as could be at home.

Dr. Yeomans, M. H. O., Belleville, had several cases of scarlet fever in the city last winter, but none traceable to the Institute. He has always found the authorities there extraordinarily careful and ready to co-operate in stamping out disease.

Dr. Malone, M. H. O., Sydney Township, in which the Institute is situated, could not trace any cases to it unless possibly one, where the mother worked there, but not certain as another case just across the road. Dr. Coughlin reported all cases, also measles, and he was perfectly satisfied. Dr. Coughlin took every precaution to protect the general public.

At the time of my visit the whole Institution was undergoing a complete cleansing and disinfecting preparatory to a return of the pupils after the holidays.

It will appear from my investigation that there is no certainty that the disease in either St. Thomas or Chatham Township was carried from the Deaf and Dumb Institute. On the other hand, apparently every reasonable precaution was taken; in fact, extraordinary precautions, to prevent the disease being carried out, and no blame can attach to the authorities of the Institute.

REPORT *RE* COBALT.

(August 31st, 1910.)

To the Secretary, Provincial Board of Health, Ontario.

SIR.—Reports of numerous cases of typhoid fever in Cobalt having reached this office, by your directions I visited that town to investigate on 27th, 28th, and 29th inst.

It will be recollected that last Fall there was an epidemic of this disease, and over 1,100 cases were reported there between January 1st and the end of the year. Officials of your Board had charge of the cleaning up of the town in September and October, and left it in a pretty good condition.

At this time a year ago there were 80 cases. The water supply was bad—much of it taken from shallow, polluted wells; yards and streets were filthy; no proper system of sewerage, and what few drains existed were in themselves a nuisance and a menace to health. Your officials had over 1,200 loads of garbage removed and seventy-four wells closed, and the Municipal Council passed several by-laws *re* scavenging system, abolition of hogpens, control of bread and meat supplies, etc., all in the direction of providing cleaner and healthier conditions.

At the present time I find on consulting Dr. McLaren, Acting M. H. O. (his partner, Dr. Hair, M. H. O., being ill with typhoid), that "the conditions are not alarming," although there are about thirty-five or thirty-six cases of the disease in town. Nine are in the Miners' Hospital and seventeen in the Civic Hospital, the others scattered about town. Four in the Civic Hospital are from one mine, and the nine in the other hospital all from different mines. Several cases are from the northern country about Kelso or Porcupine, etc.

The civic authorities have been making an honest effort to better conditions. They have provided a civic water supply from Sassaganaga Lake, which has always proved good. It is through pipes laid on the surface of the ground all over town, but, of course, is only available during unfrozen months, and in winter will have to be provided by water-carriers. The polluted wells spoken of have been kept closed. They are proceeding with a permanent water system slowly, but as rapidly as the town finances will permit, or perhaps faster, as the work was stopped at the time of my visit, the workmen being on strike, for lack of funds to pay them.

A civic scavenging system is now in satisfactory operation, an average of sixty loads of garbage per week being removed, and in another week an incinerator will be in use for its destruction.

All conditions in town are very much improved since last year, but I regret that the sewer system is not yet installed; in fact, in some respects drainage is worse. The early completion of the water system and the immediate installation of a complete sewerage system are absolutely necessary before the town can be considered sanitary or free from being a standing menace to its citizens and the travelling public.

Re the mines in town and surrounding neighborhood: Last year your Inspectors visited over eighty, and, many being unsanitary, gave directions for local improvements. Over 300 typhoid cases came from the mines, and no doubt were caused by the men drinking polluted water from crevices in the drifts and tunnels.

Your officials urged the owners and managers, through the Mine Managers' Association, to provide a supply of good water for their men in the mines, suggesting that it could be supplied through a pipe down each shaft and tapped at each drift or by kegs and cans daily, or by each man taking daily to his work a water bottle.

We also urged the installation of portable privies, as we found in over 30 per cent. of the mines that the workmen did not come to the surface to answer calls of nature, nor will they do so where they have to come several hundred yards through wet tunnels and climb ladders for from 100 to 300 or 400 feet, nor in our cold winter weather.

Had these suggestions been carried out, the contamination of the small percentage of water which might still be used by some thoughtless men from the crevices would be reduced to a minimum.

However, I was informed by the President of the Miners' Association that a circular had been sent out to all managers, suggesting the daily fresh water supply, but, so far as he had learned, it was not generally adopted. A few, however, have it in operation, and are comparatively free from typhoid this year.

The portable privy suggestion has been entirely ignored, and the only reason assigned is the general one, that they would prove a nuisance, but no valid individual reason was mentioned. They are in use in most mining regions, and are appreciated by the workmen, as I have been informed by employes who have used them. They are also provided for in our Ontario Mining Act.

I can only add that, so long as the water supply and privies are unprovided for, there rests a grave responsibility on the shoulders of the mine-owners, and there will be a constant danger of a serious outbreak of typhoid fever.

REPORT *RE* TYPHOID FEVER.

(November 7th, 1910.)

To the Chairman and Members, Provincial Board of Health, Ontario.

GENTLEMEN,—Since your last meeting I have been called upon to visit several places to investigate and advise with the local authorities *re* outbreaks of typhoid fever.

The most important one—Cobalt and vicinity—has been dealt with in a separate report. Of the others, a few words will be in place.

1. *Haileybury.*—This town I visited on August 28th, and met with Mr. J. L. McDougall, Chairman of the Local Board of Health, and Dr. Jackson, M. H. O. From them I learned that there had been recently in town from twenty to thirty cases. Their civic water supply was good, but five cases had been traced to one private well, which was immediately closed. About five more had been imported

from outside places, viz., Porcupine, Kelso, etc., while the remainder were believed to be traceable to flies. The disease was now under control, but there was a constant fear of further importation of cases from Cobalt, with which they are in such close and constant communication.

2. *Orono.*—Here there had been an outbreak in September, and your Secretary had visited the village early in October, and after an investigation had given instructions *re* filling of a well and cleaning up of several premises. By his direction I visited the place on October 18th to see if instructions had been carried out.

The chief centre of infection had been the village hotel. In the yard was a deep well liable to all the pollution from such premises. This had been filled in, but there still remained a large pile of stable manure into which considerable human excreta had been dumped, and myriads of flies were swarming about it, and from there to the box privies a few yards away, and then into the kitchen and dining-room of the hotel. Difficulty had arisen in getting the manure removed owing to fear, etc., but as a large quantity of lime had been mixed in and scattered over it shortly before my visit, I advised that the owners, contractors on the Canadian Northern Railway nearby, be required to remove it immediately. This has since been done. The premises of a slaughter-house had been well cleaned up. A Sanitary Inspector, Mr. Foster, had been appointed, and he was apparently acting energetically towards cleaning up and disinfecting all premises. Dr. Tucker, M. H. O., assured me all precautions were being taken to prevent secondary cases. He believed all so far were traceable to the well or flies at the hotel, and mostly to one particular day, viz., Fair Day, when nearly every affected person had partaken of one or more meals at the hotel. Several patients had gone to hospitals in adjoining towns, and others were being treated at home, but the disease was apparently under control.

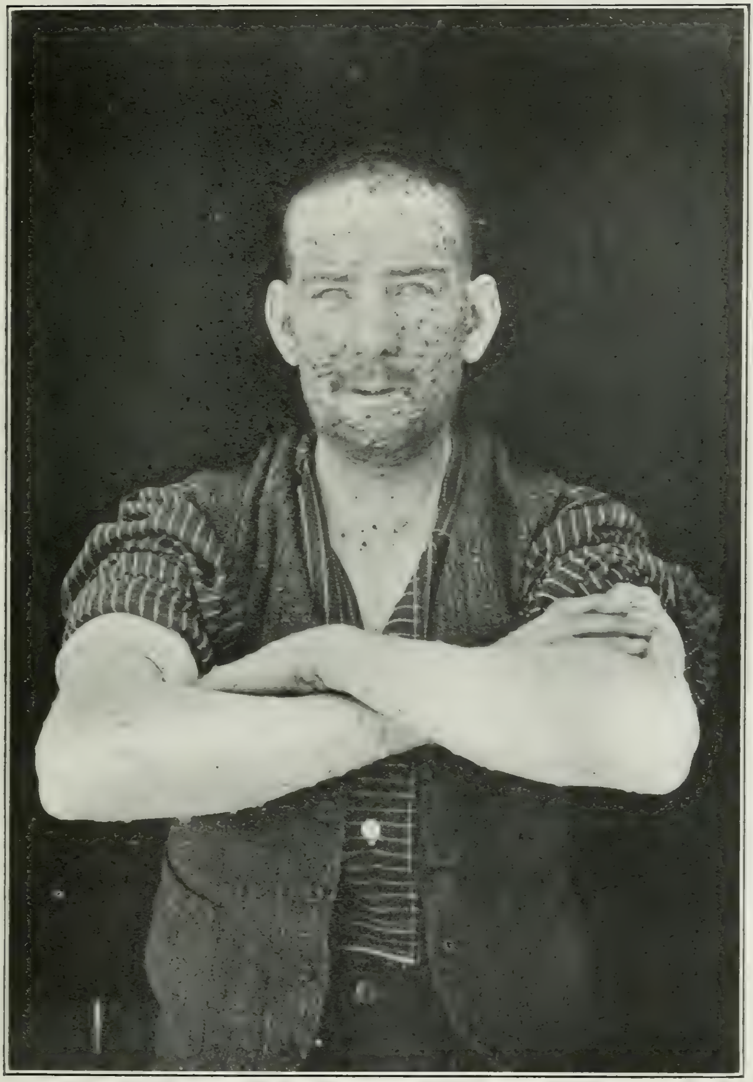
3. *Webbwood.*—An urgent call took me to this town on October 20th. Here there is a population of a few hundred. There is no civic water system, the supply being got from wells driven through hard pan. Drainage is bad, and several cesspools were defective. Manure piles were found with flies innumerable, also filthy pit and box closets without the use of dry earth or ashes. One terribly overcrowded boarding-house was seen, the whole place being very dirty. One room, 26′ x 28′ x 8′ had twenty-six double bunks in two tiers and no furniture, only straw and blankets in each bunk. Another room, 28′ x 12′ had ceiling slope from 7′ high at one side to the floor at the other, and here were four double beds. This room had one window 28 inches square. Other rooms very little better.

All the premises mentioned, as also a Chinese laundry, were visited with Reeve Chant and the Chief of Police. I advised with them in regard to improving the sanitary conditions of the village by cleaning up all premises, better drainage, altering cesspools, closets, etc., removing manure and garbage, and prevent overcrowding. Some typhoid-carrier, I think, had brought the disease to the locality, and the flies had spread it, but as the fly season was about over, the outbreak was abating. As Dr. Dudley, M. H. O., was absent, I could not get statistics as to the number of cases, but there had evidently been from twenty to thirty cases.

SUPPLEMENTARY REPORT ON TYPHOID FEVER.

(November 18th, 1910.)

On November 11th I visited the Village of Cobden, in Renfrew County, where I found there had been twenty-one or twenty-two cases of typhoid fever during the



Smallpox, 9th day. Township Roxborough, Co. Stormont, Ont.

previous five or six weeks, these being in ten different houses—five in the village and five in the neighboring country. Two houses had five cases each. Fortunately, there were no deaths.

Prior to this time there had been two or three cases—one coming from Cobalt in April and one, if not two, came from outside in August, and to the probable pollution of a well by these all the later cases could be traced, as every one of them used the water from the same well.

This well was fourteen or fifteen feet deep, and so situated that it would likely get the soakage from a closet used by the typhoid patients. I ordered this well to be closed and filled in, also an adjoining cesspool.

The water supply for the village is mostly obtained from wells, and the water from about a dozen of them had been recently examined at our laboratory, and all but one showed colon bacilli and much chlorine pollution. A village sewer for cellar and surface drainage discharges into Muskrat Lake, on the shore of which it lies. A dump for closet excreta, etc., is on the bank of a creek a few hundred yards south, which runs into the lake. Out of the lake close by, the village supply of ice is taken. I advised a change to McLaren's Pond, some distance up the creek, where I was informed ice could be obtained free from contamination. With these changes and the use of calcium hypochlorite in some of the well waters, the epidemic should soon be at an end. Dr. Stewart, M.H.O., and Local Board of Health undertook to deal vigorously with the sanitary conditions of the village, etc.

Village of Acton.—On November 14th I visited the Village of Acton, and by Dr. Holmes, M. H. O., was informed that during the past three months there had been about ten cases scattered through the north end of the village in six houses. Not traceable to milk or water, and all have recovered. None at present within village limits.

However, in a suburb known as Beardmore Crescent, consisting of twenty-two houses, occupied by employees of Beardmore's Tannery, there were several cases, and there had been three deaths. The first case three months previously developed in a patient who had been in Toronto ten days before and attributed to water drunk there, but this is doubtful, as there were cases in the village nearby.

All the lots in the Crescent were fairly clean, but there were eight wells in use, about forty-five feet deep, in sandy soil, and several pit closets in close proximity, only thirty or forty feet distant in some cases. I advised the immediate examination of water from all the wells, also the abolition of all pit closets and the substitution of the bucket and dry earth system. The continued use of water from any or all wells to depend on the result of the examination, as it appeared to be the most probably source of the trouble.

REPORT *RE* SMALLPOX.

(December 31st, 1910.)

To the Chairman and Members, Provincial Board of Health, Ontario.

GENTLEMEN,—During the year just closing I have been called to visit but few places where there was smallpox, and at none of these was there anything to cause much alarm. The type continues light, and fatal cases rare.

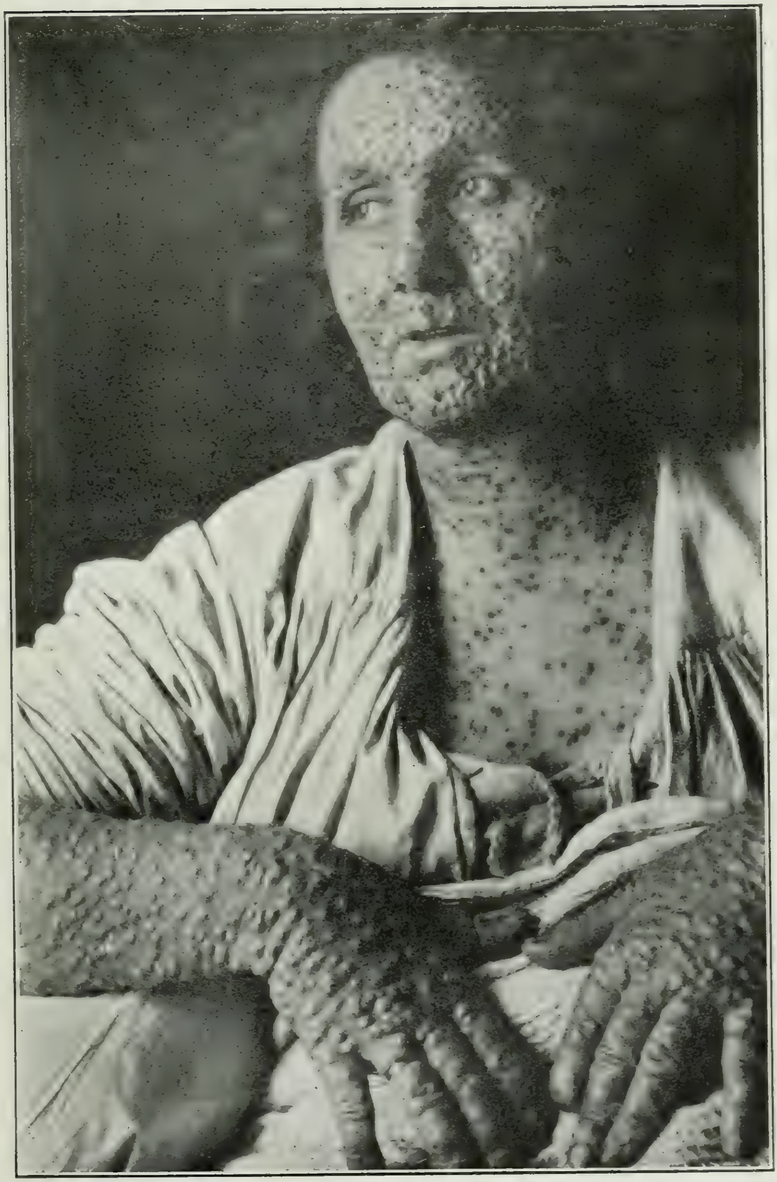
Whitney.—On May 7th I visited Whitney in the Algonquin Park district, and there found cases in two houses, one an Indian. From there exposed persons had gone east into North Renfrew, but Dr. Hand had notified the authorities in the municipalities where they were supposed to have gone. He had the matter well in hand and was dealing satisfactorily with it.

Kearney.—On my way out from Whitney I had a conference with Dr. Mason, of Kearney, where there were, he informed me, three cases. He was dealing with them satisfactorily, but without unanimous backing of the Local Board of Health, which he should have had.

North Bay.—Notified at Whitney by telegram from your Secretary, I hastened to North Bay and there found smallpox had broken out in the gaol, which was much overcrowded. The first case was in a prisoner sent down for trial from Cobalt. On May 8th I visited the gaol and found three cases had been removed the day before to isolation tents sent by your Secretary, and were encamped outside the town and attended by short term prisoners. One more case I located and had sent out at once. A large number of time-expired men who had been exposed were under canvas in the gaol yard. About 60 had been more or less exposed during the previous week or ten days, and no vaccinating had been done, as a dispute had arisen as to whether it was the duty of the Gaol Surgeon or Medical Health Officer of the Town to do it. This matter I soon settled and before night had all done, and the clothing and several corridors undergoing disinfection. There was a little trouble in getting some of the gaol officials to assist us promptly, but as Dr. Smith, Inspector of Prisons, etc., was on the scene, this was soon overcome, and I left everything in shipshape for a speedy stamping out of the disease, which I am pleased to say was soon accomplished.

Cobalt.—May 9th and 10th I spent in Cobalt, where there had been a large number of cases. An isolation camp in a suitable place had been established to the north of the town and here I saw 12 patients with Dr. Hair, M. H. O. There had been to date 48 cases, 35 being treated in the isolation camp. The most under treatment at one time was 25, and at present 18—most of them being well on to recovery and the outbreak apparently checked. At least 1,700 persons had been vaccinated. All in mines had been vaccinated. Forty per cent. of all others showed good marks or had had smallpox, especially the French and Polacks. Schools, churches and all public assemblies had been closed for two weeks from April 27th. Proclamations for general vaccination had been issued by both town and adjoining township of Coleman. The first case came from Pembroke and North Bay. The majority of all cases were in men from the Maritime Provinces and unvaccinated. Ninety-five per cent. never vaccinated, and five per cent tried but did not take. I met with the Local Board of Health and M. H. O. and left them with the situation well in hand and being vigorously dealt with.

Massey.—May 26th and 27th I spent at Massey, where two cases were in an isolation camp on the bank of the Spanish River. These cases had come in from lumber drives of the Carney and Serpent River Lumber Companies, a long distance up the Sauble River. Nothing had been done to quarantine these drives, so I at once conferred with the Local Board of Health, managers of the companies and physicians, and had the companies dispatch physicians to vaccinate the men on the drives, who might be allowed to continue work as well isolated, but allow none to leave until quarantine period expired, and if any should arrive in town—as one did while I was there—they were to be placed in a suspect camp immediately. The



Smallpox, 5th day. Township Roxborough, Co. Stormont, Ont. Of a family of eight, all took the disease except the father, who alone had been vaccinated.

companies agreed to pay all expenses connected with the cases and the town preferred looking after them. Dr. McLeod, M. H. O., with the Local Board of Health were fully alive to the situation and prepared to handle it satisfactorily.

Brantford.—In compliance with your instructions at your August meeting, I visited Brantford to investigate the complaint that the smallpox outbreak had assumed serious proportions and was not being dealt with properly. From Dr. Pearson, M. H. O., and others, I learned that there had evidently been cases in the city for some weeks before being recognized, but immediately on the Local Board of Health becoming cognizant of the situation it was dealt with as the Act requires. There were at the time of my visit still 23 cases, but none of very recent development and the outbreak evidently under control.

The complaint was principally that general vaccination was not being carried out and that the Proclamation which had been issued was being disregarded. I suggested a few prosecutions of the defiant ones as a remedy, and if through their action the outbreak became a menace to the outside public, a quarantining of the whole city might be in order. In the schools vaccinating had been carried on satisfactorily. In all Dr. Pearson thought there had been 2,000 vaccinations.

Moose Creek.—This village, situated in Stormont County, I visited with Dr. Robb of Avonmore, M. H. O. for the Township of Roxborough. Here smallpox had been rampant and unrecognized for several weeks until a few days before, when Dr. Robb was called and found cases in two houses, one a hotel. His diagnosis was confirmed by two consultants. Quarantine was immediately established. Rumor said there had been many cases. We started an investigation and visited about 20 families and in the majority of them found several cases either with rash still out or recently recovered. Mild cases and exposed persons had attended school, visited Post Office, stores, etc., and so the disease had spread until there had been probably a couple of score of cases. One resident physician, who had been consulted, even without seeing the patients, had pronounced the cases chickenpox, and to me persisted in denying the diagnosis of smallpox. No vaccinating had been done. I had a meeting of the Township Board of Health called, and conferred with them as to the proper course to pursue *re* vaccinating, quarantining and disinfecting, and such other steps as necessary to eradicate the disease. I fear, however, they will meet with considerable opposition from non-believers.

Maxville.—A few miles from Moose Creek I visited Maxville on December 6th, and with Dr. McDiarmid, M. H. O., saw a most typical case in papular stage in a young woman who had slept two nights in an infected house in Moose Creek between two and three weeks previously. There had been cases in two other families in Maxville, but they had been well cared for and were almost recovered. I also here met the Local Board of Health, but, as they with their M. H. O. had been vigilant and active in dealing with the disease effectively, there was little danger of its spreading.

Recently reports of outbreaks from several places have reached this office, but most of them are being dealt with by the local authorities. However, present indications are that the disease is going to be more or less prevalent through New Ontario this winter, as cases are reported from Whitney, Massey camps, North Bay, Porcupine, etc. To the latter place one of our Sanitary Inspectors has just gone with full equipment for a temporary hospital. The other places are being investigated and all necessary steps taken to check the further spread of the disease, although it is difficult to cope with because of its mild type, and many cases are either concealed or not recognized, thus allowing patients or carriers of the disease to travel on railway trains, enter hotels or boarding houses, lumber or other camps, and so scatter the disease broadcast.

I believe, however, that the employers of labour and their contract physicians in the unorganized districts are on the alert, and will lend us all the aid they can in dealing with the situation.

REPORT *RE* TREATMENT FOR PREVENTION OF RABIES.

(December 31st, 1910.)

To the Chairman and Members, Provincial Board of Health, Ontario.

Gentlemen,—Rabies in animals having been very prevalent during the past two or three years in this Province, and many human beings, having been bitten by these animals, had to incur the expense of going to New York for treatment. In the early part of the present year the Government of the Province, co-operating with the Dominion Government, ordered for its suppression the muzzling of all dogs in the district west of the eastern boundaries of the counties of York and Simcoe, and the order has been fairly well obeyed, as well as thousands of dogs being killed, all of which has aided very materially in stamping out the disease.

It was deemed expedient, if possible, to have the Pasteur Treatment administered here to any of our citizens who had been exposed to the rabic poison, and therefore arrangements were made with the Research Laboratory of the City of New York for a daily supply of the Pasteur vaccine for such cases as we might have, at a cost of $25.00 per patient. A room was secured at both Toronto General and Sick Children's Hospitals, and these were equipped with the necessary tables, syringes, etc., by this Board.

Our first patients presented themselves on March 4th, and so rapidly did others apply that ere long we had 35 under treatment at one time. The treatment was carried on for several months by Drs. Hodgetts, Amyot and Bell, and later by the junior members of the medical staff of the Laboratory. As this consisted of the injection hypodermically of a stated amount received daily for each patient, considerable time was consumed visiting the hospitals, etc., but a residence in hospital was not required as a rule for the patients, each one coming at a stated time daily for treatment, which lasted for three weeks, or in a few cases a little more.

In all, to the end of October, 71 patients have been under treatment who have been exposed to the rabic poison or suspiciously so. A large number of brains of suspected animals have been examined in your Laboratory, especially if human beings had been bitten by the animal, and in a large number of cases Negri Bodies were found, putting the cases beyond suspicion. The cases under treatment had been exposed to the poison from dogs, horses, cattle, sheep and cats, some bitten, some scratched and others to the saliva possibly being absorbed through cuts or wounds. Only one developed case in a human being has been reported—a most heartrending one in a boy in Hamilton, which proved fatal, but had not received the Pasteur Treatment. The treatment so far has proved successful in all cases where it has been administered by us.

Since writing the above, as the year closes, two new cases have reported and are now under treatment, a total of 73 cases, as follows:

Adults, 52. Children, 21.
or
Males, 56. Females, 17.

coming from nineteen different counties, viz.

Middlesex	13
Huron	11
Kent	8
Oxford	7
Wentworth	6
Waterloo	5
Perth	4
Lambton	3
Wellington	3
Haldimand	2
Welland	2
Lincoln	2
Halton	1
Durham	1
Norfolk	1
Carleton	1
Brant	1
Peel	1
Grey	1
	73

Owing to the large number of cases we have had, a rebate of five dollars per patient has been granted from New York for the treatment supplied, and by the Minister's order this amount has been refunded to each patient.

The extra expense incurred in connection with the treatment has been almost exactly this amount per patient, but has been borne by this Board.

Present indications are that the disease is almost stamped out in the Province.

SUPPLEMENTARY REPORT ON THE LINDSAY OZONE WATER PURIFICATION PLANT.

BY THE PROVINCIAL BOARD OF HEALTH OF ONTARIO.

INTRODUCTION.

In the fall and winter of 1909 and 1910 there was an extended examination of this plant made by Drs. Nasmith and Philp, of the Provincial Laboratory, report of which was published early this year.

The Water Commissioners of the town having expressed themselves as not being entirely satisfied with the results of this examination, the Honourable the Provincial Secretary instructed me to have a further test made, with the object of having the efficiency or otherwise of the plant decided to the entire satisfaction of the Lindsay authorities.

Accordingly, last September Drs. Nasmith and Archibald were sent to Lindsay, where they made the required test and reported as within.

John W. S. McCullough, M.D.,
Chief Health Officer of Ontario.

October 18th, 1910.

LETTER OF TRANSMISSION.

To Hon. W. J. Hanna,
Provincial Secretary,

Sir,—I have the honour to submit the report of the further examination of Lindsay Water Purification Plant. The work was carried out by Drs. G. G. Nasmith and T. D. Archibald from September 28th to October 8th, 1910.

I have the honour to be,

Sir,

Yours obediently,

John W. S. McCullough,
Chief Health Officer of Ontario.

LABORATORIES OF THE PROVINCIAL
BOARD OF HEALTH,

TORONTO, October 18th, 1910.

DEAR DOCTOR,—I have the honour to present to you the report of Drs. Nasmith and Archibald on the retest of the Ozone Water Purification Plant at Lindsay.

The retest was begun on September 28th, 1910, and finished on October 10th, 1910. It was chiefly bacteriological, but thorough for the time at their disposal, and should dispose of this case for good and all.

I have the honour to be,

Yours very truly,

JOHN A. AMYOT.

DR. JOHN W. S. MCCULLOUGH,
Chief Health Officer of Ontario,
Toronto.

REPORT OF EXAMINATION OF LINDSAY WATER PURIFICATION PLANT

September 28th to Oct. 8th, by G. G. Nasmith and T. D. Archibald.

Date	Hour		Serial No.	Number of Bacteria		Colon	Remarks
	A.M.	P.M.		18°-20°c.	37°c.		
Oct. 3	....	4	1				
			Raw	131	86	–	Ozonizer not working. Transformer being repaired.
			Filtered	62	57	-	
			Ozonized	28	13	–	
			Tap	64	16	-	
Oct. 4	10	....	2				
			Raw	147	16	+	Ozonizers and two small transformers working. Spreaders in series at 37°c.
			Filtered	21	..	–	
			Ozonized	20	9	–	
			Tap	20	23	–	
Oct. 4	12n.	....	3				
			Raw	306	97	+	Ozonizers and two small transformers working.
			Filtered	64	34	-	
			Ozonized	27	11	–	
			Tap	43	32	–	
Oct. 4	....	6.15	4				
			Raw	499	145	–	Plant disabled for several hours by burning-out of transmission wire.
			Filtered	87	49	+	
			Ozonized	55	53	–	
			Tap	69	81	+	
Oct. 5	10	....	5				
			Raw	338	114		Conditions as in Series 3.
			Filtered	186	64	–	
			Ozonized	148	33	–	
			Tap	76	27	+	
Oct. 5	12n.	....	6				
			Raw	242	12	–	Conditions as in Series 3 with blower working.
			Filtered	72	18		
			Ozonized	40	25	-	
			Tap	102	16	–	
Oct. 5	....	2	7				
			Raw	160	3	-	Conditions as in Series 3 with blower working.
			Filtered	85	19	–	
			Ozonized	52	6	–	
			Tap	69	21	–	
Oct. 5	....	4	8				
			Raw	121	5	–	Conditions as in Series 3 with blower working.
			Filtered	56	1	-	
			Ozonized	26	4	-	
			Tap	21	3	-	
Oct. 6	10	....	9				
			Raw	81	202	–	Conditions as in Series 3 with blower working.
			Filtered	27	61	+	
			Ozonized	18	62	-	
			Tap	17	27	+	
Oct. 6	12n.	....	10				
			Raw	107	265	–	Ozonizers and two small transformers working. Blower working.
			Filtered	53	53	–	
			Ozonized	43	63	-	
			Tap	47	49	–	
Oct. 6	....	....	11				
			Raw	108	146	–	Ozonizers and two small transformers working. Blower working
			Filtered	29	42	–	
			Ozonized	4	19		
			Tap	11	16	-	

LABORATORIES OF THE PROVINCIAL
BOARD OF HEALTH,

TORONTO, October 12th, 1910.

DEAR DOCTOR,—According to instructions, we proceeded to Lindsay, and were prepared to go on with the experiments on Thursday, September 29th. Owing to the blowing out of a transformer, we were unable to proceed with the work until Monday, when we began making regular tests, and continued them until the end of the week. The two small transformers and both ozonizers were working during the testing period except in the case of Series 1, when ozone was not being produced.

It quickly became evident that the purification system was working much the same as Dr. Nasmith and Dr. Philp had found it during the winter of 1909-1910.

On October 7th an attempt was made by the Superintendent of the waterworks to pump the ozone directly from the ozone room to the bottom of the mixing well; the attempt proved unsuccessful, as the pump was not powerful enough for the purpose. As the results obtained were decisive, the Chairman of the Water Commissioners, Mr. J. D. Flavelle, agreed that any further testing of the water would be useless until improvements were made in the method of getting the ozone into contact with the water. He has also, we believe, concluded that the water must have, unknown to Dr. Archibald, been tampered with during Dr. Archibald's investigation.

Averaging the eleven series grown at 18°-22° C., it will be seen that the filters have removed 66.9 per cent. of the bacteria. Omitting Series 1, during which the ozone was not being generated, the reduction was found to be 37.1 per cent., due to the ozone. Series 1, however, with no ozone, shows a reduction of 64.8 per cent. at 18°-22° C., and a reduction of 77.1 per cent. at 37° C. Taking the ten series from 2 to 11, the total reduction by filters and ozone was 80.4 per cent.

Omitting Series 2, which was overgrown with spreaders, and also Series 1, the filters removed 65.5 per cent. and the ozone treatment 19.1 per cent. of the bacteria grown at 37° C.

In the eleven series, colon bacilli were present in the raw water nine times, in the filtered water five times, in the ozonized water six times, and in the tap water six times.

Sincerely yours,

GEORGE G. NASMITH.
T. D. ARCHIBALD, M.B.

DR. J. W. S. MCCULLOUGH.
Chief Health Officer of Ontario,
Parliament Buildings,
Toronto.

REPORT OF THE INTERNATIONAL COMMISSION ON THE CONTROL OF BOVINE TUBERCULOSIS.

Presented for the consideration of the Dominion Public Health Conference, a meeting of Dominion and Provincial Public Health representatives with the members of the Committee on Public Health of the Commission of Conservation, convened at Ottawa, on October 12th, 1910, at the instance of the Standing Committee of the Senate on Public Health and Inspection of Foods.

MEMBERS OF THE INTERNATIONAL COMMISSION ON THE CONTROL OF BOVINE TUBERCULOSIS.

Senator W. C. Edwards	Ottawa, Canada
Mr. J. J. Ferguson	Chicago, Ill.
Mr. J. W. Flavelle	Toronto, Canada
Hon. W. D. Hoard	Fort Atkinson, Wis.
Dr. C. A. Hodgetts	Toronto, Canada
Dr. J. N. Hurty	Indianapolis, Ind.
Dr. J. R. Mohler	Washington, D.C.
Dr. V. A. Moore	Ithaca, N.Y.
Dr. M. P. Ravenel	Madison, Wis.
Dr. M. H. Reynolds	St. Paul, Minn., Secretary
Dr. E. C. Schroeder	Washington, D.C.
Mr. T. W. Tomlinson	Denver, Col.
Dr. F. Torrance	Winnipeg, Canada
Dr. J. G. Rutherford	Ottawa, Canada, Chairman

MEETINGS.

First meeting, Buffalo, N.Y., December 13 and 14, 1909.
Second meeting, Detroit, Mich., March 1 and 2, 1910.
Third meeting, Ottawa, Canada, May 19, 20, and 21, 1910.
Fourth meeting, Madison, Wis., June 27 and 28, 1910.

REPORT OF THE INTERNATIONAL COMMISSION ON THE CONTROL OF BOVINE TUBERCULOSIS.

To the President of the American Veterinary Medical Association:

Owing to the great economic and sanitary significance of animal tuberculosis to the live stock industry of America and the many and varied factors which must of necessity be taken into account in formulating successful measures for its eradication, the American Veterinary Medical Association, at its meeting in Chicago in September, 1909, appointed the International Commission on the Control of Bovine Tuberculosis. The Commission was instructed to study the problem of tuberculosis among cattle and to report at the next meeting of the Association upon reasonable and economically practicable methods or systems to be recommended to both officials and live stock owners, for eradicating this great scourge of domesticated animals.

It is recognized that tuberculosis is widely prevalent among cattle and other animals, and that the frequency with which this great evil occurs is increasing rather than declining. As tuberculosis is one of the strictly preventable infections, there is good ground for the belief that through the formulation and enforcement of proper regulations the disease may eventually be entirely suppressed.

The Commission has held four meetings, as follows:—Buffalo, N.Y., December 13th and 14th, 1909; Detroit, Mich., March 1st and 2nd, 1910; Ottawa, Canada, May 19th, 20th, and 21st, 1910; Madison, Wis., June 27th and 28th, 1910, all of which were well attended, very few of the members having, on any occasion, been absent. The Commission begs to present as a result of its labours the following report which, although brief, will, on examination, be found to comprise the principal points essential to the promulgation of a comprehensive and practical policy, such as may reasonably be adopted by any governmental body interested in the control of bovine tuberculosis.

It is quite unnecessary, in view of the extensive knowledge already possessed by all who are familiar with the efforts which have hitherto been made to secure control of bovine tuberculosis, to dwell at any length upon the importance of the subject or upon the conditions which led to the formation of the Commission.

In view of the personnel of the Commission as selected by the American Veterinary Medical Association, and of the fact that so much information on the subject has been made available through the work of similar bodies in other countries, and the researches of scientific and practical men in America and elsewhere, the Commission has not deemed it necessary to take any evidence either from expert witnesses or others. The members fully understood that the purpose which their appointment was intended to serve was less the acquisition of new knowledge regarding bovine tuberculosis than the careful study of the knowledge already available, and of the thoughts and opinions of those most entitled to speak with authority on the subject. The conclusions reached in this report are, therefore, simply the outcome of an earnest and thoughtful consideration of the various modern aspects and phases of the problem, with the object of crystallizing public opinion and so clearing the way for legislative action. They realized also that they could deal with fundamental principles only, and that the details of any policy which they might outline must, in each case, be worked out by the duly authorized and responsible representatives of the community immediately concerned. They nevertheless deemed it essential to study closely the history of the various efforts hitherto made by such countries throughout the world as have attempted to legislate on the subject. This naturally led to the gradual elimination of all methods other than such as might reasonably be adopted by any community desiring, in the full light of present-day knowledge, to undertake the control of bovine tuberculosis.

It was felt, in view of the prevalence of the disease, especially in some localities and among certain classes of cattle, the difficulty of providing a sufficient number of trained officials and the large economic questions involved, to say nothing of the enormous expenditure, that it would be unwise, for the present at least, to seriously discuss a policy of universal compulsory testing and slaughter. Such a policy might perhaps be adopted with advantage by a small community, or one in which the disease existed to a very limited extent, but speaking generally, especially in view of past experiences in this line, it was thought better to omit it entirely from the recommendations of the Commission.

All other methods of dealing with bovine tuberculosis which have been recommended or tried in various communities, were thoroughly discussed, with the object of discarding weak points and adopting such features as might be deemed worthy of a place in the official findings of the Commission. Every phase of the subject was in this way fully and freely considered, it being thought best to cover the whole ground as completely as possible before coming to a definite decision on any one point.

In order to still further minimize the risk of omitting from the deliberations of the Commission any phase of the question, four committees were appointed at the first meeting to deal respectively with:

(1). Education and legislation,
(2). Location of tuberculosis,
(3). Dissemination,
(4). Disposition of tuberculous animals.

The appointment of these committees proved to be of the greatest possible value in concentrating the energies of the various members upon those branches of the subject with which they were most familiar, and their reports presented at subsequent meetings enabled the Commission to reach satisfactory conclusions much more rapidly than would otherwise have been the case.

As a means of furnishing information as to the reasons for these conclusions and the manner in which they were reached, the Commission would recommend that the reports of the committees should be published as an appendix to this report.

The Commission recognizing after careful study that the tuberculin test is the fundamental factor in any policy having for its object the control of bovine tuberculosis, decided that a pronouncement to that effect should properly occupy a foremost place.

RESOLUTIONS.

Based on the information contained in the reports of its committees and on such other information as was brought out in the general discussions of the Commission, the following resolutions were adopted for presentation to the American Veterinary Medical Association.

1. *Dissemination.*—As a general policy to be observed, all contact between tuberculous and healthy cattle and between healthy cattle and stables, cars, etc., which may contain living tubercle bacilli should be prevented. To accomplish this the following specific recommendations are made:

(1) There should be no sale or exchange of animals affected with tuberculosis except for immediate slaughter or for breeding purposes under official supervision.

(2) That the managements of live stock shows should give preference to cattle known to be free from tuberculosis, either by providing special classes for such cattle or in some other practical way, and should also take every precaution to prevent contact between such animals and those not known to be free from disease.

(3) All live stock shippers should take every precaution to see that cars furnished are thoroughly cleansed and disinfected before use.

2. *Tuberculin Test.*—(1) That tuberculin, properly used, is an accurate and reliable diagnostic agent for the detection of active tuberculosis.

(2) That tuberculin may not produce a reaction under the following conditions:

(a) When the disease is in a period of incubation.
(b) When the progress of the disease is arrested.
(c) When the disease is extensively generalized.

The last condition is relatively rare and may usually be detected by physical examination.

(3) On account of the period of incubation and the fact that arrested cases may sooner or later become active, all exposed animals should be retested at intervals of six months to one year.

(4) That the tuberculin test should not be applied to any animal having a temperature higher than normal.

(5) That any animal having given one distinct reaction to tuberculin should thereafter be regarded as tuberculous.

(6) That he sub-cutaneous injection of tuberculin is the only method of using tuberculin for the detection of tuberculosis in cattle which can be recommended at the present time.

(7) That tuberculin has no injurious effect on healthy cattle.

3. *Evidence from Tuberculin Test.*—That a positive reaction to tuberculin in any properly conducted test, official or otherwise, in any animal in any herd, shall be considered evidence sufficient upon which to declare the herd to be infected.

4. *Compulsory Notification.*—That this Commission recommends the passage of legislation providing for the compulsory notification by owners and by veterinarians of the existence of tuberculosis in a herd, whether such existence be made known by detection of clinical cases or by the tuberculin test.

5. *Location Through Slaughter.*—This Commission recognizes that the discovery of tuberculosis in animals slaughtered for food purposes furnishes one of the best possible means of locating the disease on the farm, and therefore recommends the adoption of some system of marking, for purposes of identification, all cattle three years old and over, shipped for slaughter.

As tuberculosis of hogs is almost invariably due to bovine infection, this recommendation should also be made to apply to hogs of any age shipped for slaughter.

It is further recommended that the discovery of tuberculosis in animals coming under Government inspection should be used whenever identification is possible, as a means of locating infected herds and premises. All such cases should be reported to the proper authorities for control action.

6. *Disposition of Tuberculous Animals—The Commission Plan.*—(1) As a general policy in the eradication of tuberculosis the separation of healthy and diseased animals, and the construction of a healthy herd are recommended.

In order to accomplish this, the following recommendations are made:

(a) If the herd is found to be extensively infected, as shown by the tuberculin test or clinical examination, even the apparently healthy animals in it should be regarded with suspicion, until they have been separated from the reacting animals for at least three months.

If, after the expiration of this time, they do not react to the tuberculin test, they may be considered healthy and dealt with accordingly.

It is recommended that a herd extensively infected should not be treated by the method of general separation, but that the construction of a new herd from the offspring only is advisable.

(b) If the herd is found, by either or both of the above methods, to contain a relatively small proportion of diseased animals, separation of the diseased animals from the healthy animals, and the construction of a sound herd from the healthy animals, and the offspring of both, is advocated.

As a working basis in carrying out these principles, we advise:

(a) That herds containing 50 per cent. or more of diseased animals be treated as coming under Section 1.

(b) That herds containing under 15 per cent. of diseased animals be treated as coming under Section 2.

(c) That herds falling between these figures be graded according to the option of the owner.

(d) That it shall be the prerogative of the owner to reject either plan and have his herd dealt with by removal and slaughter of diseased animals, with or without compensation, according to the public policy in operation.

(2) That when by any means the officials properly charged with the control of tuberculosis become aware of its existence in a herd to which a policy of slaughter and compensation cannot reasonably be applied, such herd must be dealt with by the owner, under Government supervision, on the principle of the separation of all sound animals from those affected. Such separation must be effected by treating the whole herd as diseased, and rearing the calves separately, either on pasteurized milk or the milk of healthy cows, or when the number of those affected is so small as to warrant such a course, by the application to the whole herd, from time to time, under official supervision, of the tuberculin test, and the entire segregation of all animals found to react.

In the event of any owner refusing or neglecting to adopt either of the above methods, his entire herd to be closely quarantined, and sales therefrom to be entirely prohibited.

(3) That a policy of compensation be recommended as useful and usually necessary as a temporary measure.

(4) That, when slaughter is necessary, in order to avoid economic loss, every effort should be made to utilize as far as possible the meat of such animals as may be found fit for food on being slaughtered under competent inspection.

(5) The details of the Commission plan will be found fully set forth in the Appendix of this report.

7. *Prevention.*—(1) That, with the object of preventing the spread of infection, persons buying cattle for breeding purposes or milk production should, except when such purchases are made from disease free herds, which have been tested by a properly qualified person, purchase only subject to the tuberculin test. In order to assist in the proper carrying out of this suggestion, the Commission recommends that official authorities should adopt such regulations as will prevent the

entry to their respective territories of cattle for breeding purposes or milk production unless accompanied by satisfactory tuberculin test charts.

(2) That all milk and milk by-products used as food should be properly pasteurized unless derived from cows known to be free from tuberculosis.

8. *Control of Tuberculin Test.*—That the Commission recommends the passage of legislation which will prevent the sale, distribution, or use of tuberculin by any persons other than those acting with the full knowledge, or under the direction, of official authorities.

9. *Education.*—As a clear knowledge of the cause and character of tuberculosis among animals, the modes of dissemination and its significance as an economic and as a public health problem, underlie an intelligent adherence to the principles that must be observed in all efforts for eradication, as well as the establishment of proper co-operation in the great work between physicians, veterinarians, live stock owners, legislators, and the public generally, it is recommended that a widespread campaign of education be undertaken. To accomplish this end it is recommended that, first of all, a simple pamphlet on bovine tuberculosis be written, in which the language used shall be of such character that every person of average intelligence shall be able to read it without being mystified by technical terms or phrases. This pamphlet should be published with the endorsement of the American Veterinary Association and the special endorsement and consequent authority of the International Commission on Bovine Tuberculosis Control.

10. *Publicity.*—In concluding its work, the Commission desires to especially appeal to the press, metropolitan, agricultural, and local, to join in the work of extending as much as possible among the people the conclusions here arrived at. The vital importance of the life of farm animals to the welfare of all classes of society needs no argument in its support. The aim and sole purpose which has actuated this Commission has been to arrive at the soundest conclusions possible in the light of the best knowledge obtainable.

11. *Legislation.*—It is recommended that legislation regarding the control and eradication of tuberculosis among domestic animals be made uniform; that the laws of the United States and Canada and other American countries for the admission into America of animals from without be made stringent and as much alike as possible; and that the laws governing the inter-state and inter-provincial movement of cattle and that between different American countries be harmonized.

The laws governing inter-state and inter-provincial movement of cattle should be of such character that every State and every Province will be free in its eradication work from unnecessary difficulties due to the existence of the disease in other States and Provinces.

Legislation is especially required to prevent the various frauds which interfere with the satisfactory use of tuberculin as a diagnostic agent for tuberculosis, as well as for official supervision over all tuberculin sold to be used by veterinarians and others.

12. *Sanitation.*—In the eradication of tuberculosis it should be kept in mind that, in addition to protecting animals against exposure to tubercle bacilli, it is desirable to make them as resistant to infection as possible. This can be done by stabling them in clean, disinfected, and properly lighted and ventilated barns, giving them abundant clean water and nutritious food, a sufficient amount of daily exercise in the open air, and attending generally to those conditions which are well known to contribute to the health of animals.

The daily removal of manure from stables and watertight floors and good drainage in stables are urgently recommended.

Young stock particularly should be raised as hardy as possible and should be accustomed to liberal exercise and living in the open.

13. *Immunization.*—That as none of the various methods for the immunization of animals against tuberculosis have passed sufficiently beyond the experimental stage, the Commission is unable to endorse any of these for practical use at the present time.

14. *Animal Tuberculosis and Public Health.*—While the members recognize that the subject with which this Commission is primarily intended to deal is the control and eradication of tuberculosis among animals as an economic problem, they cannot feel satisfied without declaring their recognition of the fact that tuberculosis among animals is also an important public health problem. Considered as such, the eradication of tuberculosis among animals should have the approval and support of all those persons who are interested in curtailing human suffering and prolonging human life.

15. *General Statement.*—The members of the Commission wish it to be clearly understood that they recognize the limitations of a report necessarily based on actual and not on theoretical conditions. They fully realize that in the event of the policy of which their recommendations form the framework, being anywhere adopted even in its entirety, much greater benefit will be derived, at least for some time, from its educative than from its executive features.

The control, to say nothing of the eradication, of bovine tuberculosis, is impossible of achievement, without the hearty co-operation of the men who are actually engaged in the cattle industry. In order to secure this co-operation, it will doubtless be necessary, in most communities, to carry on an active and prolonged educational campaign.

It is apparent that in the dissemination of practical and reliable information regarding the disease, it will be possible to employ a very large variety of methods. Many of these methods, such as bulletins, lectures, and actual demonstrations of disease, having already been found valuable, will doubtless continue to be largely used.

It must not be forgotten, however, that in this, as in any other educative process, a measure of disciplinary control is essential to success. Needless to say, such control can be secured only by the passage of legislation which, while clear and comprehensive, must, at the same time, be sufficiently conservative to avoid exciting alarm or arousing antagonism on the part of owners especially of valuable herds.

The best law ever framed can be made an utter failure by stupid or injudicious administration, while, on the other hand, the most drastic legislation can be rendered acceptable if enforced with reasonable tact and diplomacy. Provided, therefore, that these qualities, combined with integrity, thoroughness and determination, are available for administrative purposes, the members of the Commission are convinced that the enforcement of a law based on their recommendations, will prove to be by far the most powerful and effective educational agency which could possibly be employed.

In concluding its report, the Commission would suggest that the Association should make such provision as may be necessary to carry on the work either by continuing the Commission as at present constituted or with such changes in the personnel as may be considered desirable.

REPORT OF THE SUB-COMMITTEE ON EDUCATION.

The Sub-Committee on Education respectfully submit the following:—

Bovine tuberculosis has become widely distributed throughout the United States and Canada and it has been determined that efficient systems or methods for its eradication and prevention either under the supervision of the state or nation or by the cattle owners themselves, are of necessity based on a knowledge of the nature of the disease and its means of dissemination.

Experience has shown that the principles of eradication and prevention may be successfully applied by individual owners of infected cattle, independent of state assistance. Such individual aid is essential in conjunction with state or national assistance in the prompt eradication of the disease from infected herds and the prevention of its entry to non-infected herds.

Therefore, it is the sense of this Committee that every possible means should be employed for educating the cattle owners and the general public concerning the nature of tuberculosis; the care and precautions necessary to prevent its entrance into herds already free from the disease; and in methods for its eradication from herds where it now exists.

Further, this Committee approves of the following methods for instructing laymen, practising veterinarians, practitioners of human medicine and health officers in the nature and control of bovine tuberculosis, namely:—

1. By the publication in agricultural and dairy papers of short, accurate and carefully prepared articles on bovine tuberculosis.

2. By the publication of appropriate articles on bovine tuberculosis in veterinary, medical and sanitary papers and journals.

3. By recommending to agricultural societies, granges and directors of farmers' institutes and unions, and especially those interested in creameries and cheese factories, that lectures on bovine tuberculosis, its nature and control, be made a part of their programmes and that, so far as practicable, demonstrations be held.

4. That those having in charge the arrangement of town, country and state fairs be requested to provide lectures on bovine tuberculosis, and, if practicable, to hold public demonstrations at their annual meetings.

5. By placing a copy of the report of the Commission in the hands of the deans or directors of all veterinary and medical colleges and schools of sanitary science in the United States and Canada with recommendations that special emphasis be placed in their courses of instruction on the nature of bovine tuberculosis and methods for its control.

6. That a pamphlet dealing with the nature of bovine tuberculosis and methods for its control should be written in language intelligible to the layman. This pamphlet should have the approval of this Commission and the endorsement of the American Veterinary Medical Association. It should be published for free distribution.

7. That Departments of Agriculture, State veterinarians, live stock sanitary boards and others interested in the official control of bovine tuberculosis be requested to promote as much as possible the educational features of their work, with the object of obtaining more support and co-operation from cattle owners.

The methods suggested for carrying out an educational propaganda are not to be considered at the exclusion of any and all other ways by which the public may become informed on the nature of bovine tuberculosis, its economic importance and the necessity for an intelligent and united effort on the part of cattle owners and those having charge of the control of animal diseases to eradicate this great scourge.

The Committee is of the opinion from the history of the legislation regarding bovine tuberculosis in those states and countries which have attempted to deal radically with the problem, as well as from the special information which has been furnished by this committee to its members, and the light thrown upon the subject in the discussions at its several meetings, that in order to avoid friction and failure, all important legislation with reference to tuberculosis must be prepared with due consideration for the condition of public sentiment and information on this subject.

That tuberculosis control work should be developed in a progressive way.

That tuberculin tests made at a distance for public recognition (for example, in other states or foreign countries) can only be done satisfactorily by official veterinarians.

That the Delepine or Manchester plan of tuberculosis free areas gradually extended seems worthy of cautious trial.

(Sgd.) M. H. Reynolds, *Chairman.*
W. D. Hoard.
J. G. Rutherford.

GOV. HOARD'S REPORT.

Educational Means for the Suppression and Control of Bovine Tuberculosis.

Mr. President and Gentlemen of the Commission:

I place a high value on the work this Commission may do if performed wisely, in shaping the conviction and purpose of the people of Canada and the United States concerning the prevention and control of Bovine Tuberculosis.

As yet, that conviction is but little more than an ill-defined dread of something not clearly understood by the great mass of farmers. Added to this dread is a hope stronger yet, that the evil is not as great as has been asserted; that it is a scare that will soon pass over. As yet, in the minds of farmers and breeders generally, especially in those localities where demonstration work has not been done, there is a strong undercurrent of conviction that all this talk about the disease is an interested plea of the veterinarians; that the trouble does not amount to much if the doctors and editors would hold their tongues and pens.

Just as long as this bank of fog exists, it will hamper all legislation and individual effort in getting rid of the difficulty. At the bottom of the matter is a widespread ignorance on the part of farmers as to the danger that threatens them; it is difficult to arouse them out of their conservatism, for as yet, all they know about it is talk.

The conservatism of intelligence is vastly different from that which exists because of a lack of knowledge. The first demands more light; the latter dreads light.

From what I have seen in Wisconsin, I am convinced that the most powerful aid to that action against the disease which this Commission is so anxious to bring about, is public demonstration. One animal slaughtered before a body of farmers, and the diseased parts exposed to their plain view, is worth more to foster conviction and inspire effort than anything else that can be done. If the Federal and State Governments would devote means for this demonstration work, it would prove a powerful educator. Public agitation, in farmers' gatherings, and the talk of the agricultural press is useful mainly in keeping alive an interest in the subject. But, gentlemen, we must remember that with the majority of men, a large majority, "Seeing is believing." I believe, therefore, that this Commission should use its influence in urging legislation by municipalities, and State and National legislatures for the spread and support of this demonstration work. Great care must be exercised, however, to select only such animals as will amply show forth the ravages of the diseases. The great progress we have made in legislation in Wisconsin, and in securing a wide-spread acquiescence in the use of the tuberculin test, would never have come had it not been for a large number of public demonstrations held in various parts of the State.

We have gone as far as this in legislation: that after December 1st, 1910, all animals sold for breeding or milking purposes, must first be tuberculin tested. This, I believe, is a step further in advance than has been taken by any other state. It shows well the tone and temper of our farmers and the work which has been done to acquaint them with a true understanding of the situation. It is needless for me to say that if they are for the law, or any law, it goes: if they are against it, it is at best a dead letter. It is worth a great deal in the promotion of such objects, to have a Live Stock Sanitary Board in a state, that will take hold and lead in this work. In too many instances these organizations are purely negative in their influence, and so nothing is done. There is a notable lack of funds to bear the expense of demonstration work. The farmers everywhere would willingly be taxed for its support. Municipalities could well afford to have such expense for the sake of the education it would afford to consumers of meat and dairy products.

In conclusion, I would urge upon this Commission that special emphasis be placed upon the promotion of public exhibitions of diseased cattle before and after slaughter, as the most powerful means of education concerning the nature and danger of Bovine Tuberculosis.

(Signed) W. D. Hoard.

REPORT OF COMMITTEE ON LOCATION OF TUBERCULOSIS IN CATTLE.

Your committee on the location of tuberculosis in cattle desire to submit the following as its report upon this subject:

Though we are all agreed that no method for detecting tuberculosis in cattle equals the tuberculin test, we are forced to recognize that the universal application of the test under existing conditions is practically and economically impossible. The number of cattle to be tested, for example, is so great that, if all the available veterinarians and all such other persons as may be trusted to make tuberculin tests should be started on this work at once, and kept at it, years would pass before all the cattle in the United States and Canada could be tested even a single time. Consequently, our efforts to locate tuberculosis among cattle should depend primarily upon other means than the tuberculin test.

The tuberculin test should be regarded as having only an incidental value in the systematic work of locating tuberculosis, and as being of pre-eminent importance when we undertake the determination of the extent to which the disease is prevalent at any point in any herd where it has been located by other means or, incidentally, by the tuberculin test.

In the order of seeming importance the means of location may be placed as follows:

I. NOTIFICATION.

A law should be enacted requiring any and every person having knowledge of the existence of a case of tuberculosis among cattle to report the same without delay to some proper, designated authority. Such a law would be practically equivalent to the obligatory reporting of all clinical cases of tuberculosis which must be recognized as the most serious disseminators of tubercle bacilli and propagators of tuberculosis.

Since all cases of tuberculosis that are centres from which infection is being scattered, gradually become clinically recognizable, obligatory notification of all recognized cases of tuberculosis would alone in the course of a few years locate the majority of, if not all, badly diseased herds. It would certainly locate tuberculous cattle and herds faster than they can be handled for some years to come.

II. EVIDENCE THROUGH MEAT INSPECTION.

An effort should be made to trace tuberculous animals back from slaughter houses to the farms from which they are derived. This is important because if the well-conditioned animals which go to slaughter for meat are tuberculous, it is probable that among the animals retained on the farm some active disseminators of tubercle bacilli exist, which are retained at the farm either through ignorance or a false idea of economy.

Meat inspection has already done much to establish infected areas from which tuberculous animals have been sent to market. At present, however, it is difficult to trace animals to the farms from which they were shipped, and some method of identification by means of which any animal, found on the killing floor to be tuberculous, can be traced to its place of origin is greatly to be desired. A Federal law requiring appropriate tagging, branding or otherwise identifying all hogs and dairy cattle moving interstate for slaughter and state laws compelling similar identity marks for these animals moving within the state for slaughter, would be the means of locating a large proportion of the centres of tuberculosis. Experimental work of this character which has been carried out in the past has given very interesting results. For instance, when the occurrence of tuberculosis amongst hogs at an abattoir is followed up by a tuberculin test of the cattle on the home farm it practically always discloses tuberculosis among these animals. Like much other evidence, this encourages us to believe that tuberculosis among hogs will cease to exist as an economically important problem as soon as we succeed in controlling the bovine source of tubercle bacilli.

III. THE TUBERCULIN TEST.

When the tuberculin test is applied to cattle for any purpose it should be clearly understood that the reacting animals are to be regarded in every sense of the word as recognized cases of tuberculosis, which, under an obligatory notification law, must be reported at once to the proper authority. In this way tuberculin will serve as an important means of locating tuberculosis among cattle that are tested for reasons like the following:—

1. To obtain healthy animals for export.
2. To make sure that animals imported are free from tuberculosis.
3. To make sure that animals intended for interstate movement are free from tuberculosis. And here we would like to suggest that the states should protect themselves as much as possible against bovine tuberculosis by insisting that no new cattle shall be brought in until they have been shown by the tuberculin test to be free from tuberculosis. The time, we may hope, is not far off when even breeders of exceptionally fine strains of blood will begin to realize that the very best blood coupled with tuberculous infection is an article to be shunned, not because we wish to imply that tuberculosis is hereditary, but because we know how readily it is conveyed from animal to animal by contact.
4. To obtain milk from animals shown in the most conclusive manner to be free from tuberculosis, irrespective of whether the milk is intended for special certification or for more general or regular city use.
5. To satisfy an owner of cattle that his herd is free from tuberculosis or to give him the information he needs to clean his herd from disease.

In whatever way the tuberculin test is applied, or for whatever purpose, all positive reactions obtained should be regarded as placing the reacting animal in the category of recognized cases of tuberculosis, which must be reported under a notification law.

As the newer methods of applying tuberculin for test purposes have not been found to be as reliable as the older, subcutaneous method, they cannot be advocated. The ophthalmo and cutaneous tuberculin tests may have a value in some special cases, as, for example, where doubt exists about the reliability of a subcutaneous test because an animal may have been subjected to some pernicious manipulation. In this sense, these later modes of applying tuberculin should be kept in mind.

IV. Examination of Material From Cattle and Herds.

The valuable evidence that may be obtained as to the location of tuberculosis through the examination of milk, cream, butter, centrifuge slime and other products and materials from cattle should not be neglected, especially when these examinations are made by health officers and others for the protection of public health, and are followed up by the inspection of the animals and the character of their environment as a routine procedure. Such inspections are constantly becoming more prevalent in various sections of the United States and Canada.

V. Most Important Sources of Animal Tuberculosis.

Tuberculosis as it exists among the domestic animals of America to-day, undoubtedly owes its primary introduction to the cattle of improved breeding that have been imported from European lands from time to time in the past, for the purpose of improving the native stock of the country. No particular breed is to be incriminated in this charge, as several of the most prominent and popular breeds have been found guilty of furnishing tuberculous individuals to the best American herds on repeated occasions. The knowledge that infection has taken place from these sources in the past affords us a valuable indicator of the points where search should be made in our efforts to detect the cases of tuberculosis that exist to-day upon the farms of the country. First of all, then, attention may be directed toward all herds of pure bred cattle whether of beef or dairy type, especially to those from which cattle are sold either by private or public sale, and from which cattle are thus distributed to various parts of the country; also to herds from which members are exhibited at fairs and exhibitions; and herds which keep males for custom service.

In addition to these herds of pure bred cattle, there are many others to which well bred stock has been added for the purpose of grading up and improving the quality of the individuals of the herd. These in some instances have received the infection of tuberculosis with the new animals from which such great benefits had been expected, and these herds of well graded cattle should also be regarded with suspicion until they have been proved to be free of tuberculosis. Next in order should come all dairy cattle, but the methods by which the disease may be located in these herds has been discussed above.

(Sgd.) John R. Mohler, *Chairman.*
J. W. Flavelle.
C. A. Hodgetts.

REPORT OF COMMITTEE ON DISSEMINATION OF BOVINE TUBERCULOSIS.

The sub-committee on the dissemination of bovine tuberculosis respectfully submits the appended report on the means for the dissemination of this disease, based on the present knowledge of the life history of the tubercle bacillus. The possible means for the dissemination of this disease are enumerated as follows: —

1. The introduction into a sound herd of an animal or animals affected with tuberculosis: (*a*) those with open tuberculosis; (*b*) those in which the disease is in a period of incubation and (*c*) those in which the lesions are temporarily arrested.

The last group will not transmit the infection speedily and possibly may never do so. The first group is certain to spread the virus.

2. By feeding calves, milk, whole or separated, buttermilk or whey, where the milk has come from tuberculous cows.

3. By bringing cattle suffering from open tuberculosis in contact with healthy ones at fairs, cattle shows and other exhibitions.

4. By shipping healthy cattle in cars not thoroughly disinfected, recently occupied by tuberculous cattle.

5. By placing healthy cattle in stables that have not been thoroughly disinfected and which were recently occupied by tuberculous animals, as frequently happens with the change of farm ownership or tenants.

6. Tuberculous animals which do not react to tuberculin, such as those in the period of incubation or latent cases, but which develop active tuberculosis later, are frequently carriers of the virus, although bought and sold as sound animals. These can not at present be differentiated from sound animals. Therefore all cattle coming from herds in which the disease exists should be considered as suspicious. The sound herd is the unit to deal with.

7. Tubercle bacilli may be transmitted by tuberculous cattle running in a pasture, to healthy cattle in adjoining pastures where they are separated by a fence of such nature that the cattle may get their noses together.

8. Tuberculosis in cattle rarely, if ever, occurs through infection from (*a*) man, either directly or as a carrier of bovine tubercle bacilli; (*b*) from other

species of animals, or (*c*) by infection from the droppings of crows, buzzards or other birds or carnivorous animals that have fed upon the carcasses of tuberculous cattle. It is the opinion of this committee that bovine tuberculosis is spread largely through the introduction of tuberculous cattle into sound herds; by the feeding of calves with infected milk, or milk products; by exposing sound animals to infected ones at fairs, or other cattle shows; and by exposing them to infected cars and stables. There are other ways in which now and then it is possible that an animal may become infected but the means of dissemination mentioned in this paragraph are those to be guarded against in formulating efficient methods of control.

(Sgd.) V. A. Moore, *Chairman,*
E. C. Schroeder.
M. P. Ravenel.

REPORT OF COMMITTEE ON DISPOSITION OF TUBERCULOUS ANIMALS

Your Committee on the Disposition of Tuberculous Animals begs to submit the following report:—

In the work of control and eradication of tuberculosis in animals it is first of all of the utmost importance to establish the presence of the disease in all the affected cattle, since only by such a procedure will it be possible to guard the healthy and newly born animals from infection.

Fortunately we are in a position to determine with considerable certainty the vast majority of occult cases of tuberculosis in cattle, even the incipient cases, with the air of tuberculin, and the clinical cases by physical examination. This alone constitutes a great advantage in the work of suppression of the disease. The tuberculin test should therefore be considered as a very important step in the eradication of tuberculosis. As a matter of fact, all the recognized authorities on the subject are agreed on this point. Once the tuberculous animals are recognized, consideration must be given to the most suitable and economical way of eradicating the disease from the herd. This naturally brings up the question of the disposition of the tuberculous animals, and in adopting any particular method one should be guided by the extent of the infection in the herd, the quality of the affected animals, the sanitary condition of the premises, and last but not least, the owner's intelligence and knowledge of the subject. The latter information is necessary to determine if reliance can be placed on the owner to carry out minutely all the details which are essential in executing any particular method of eradication that may be decided upon. The owner's co-operation in this work is without doubt a very essential feature of this great task. For this reason a campaign of education of the farmers and stock raisers relative to the control of tuberculosis in which all the advantages of the eradication of tuberculosis must be impressed on them, would greatly facilitate this important campaign. It is a well-known fact that any voluntary method of suppression by the herd owners themselves would bring about better and quicker results than when compulsory measures are enforced upon them by legislative enactments. Nevertheless the time has arrived when a campaign looking towards the control of this disease should be entered upon by the general government as well as the state and province. This campaign must reach in the first place all the clinical pulmonary forms of tuberculosis; then tuberculosis of the udder, intestines and uterus.

Having removed these exceedingly dangerous cases the balance of the tuberculous herd may be treated by the Bang system, which consists of the establishment of two herds of cattle, one containing the animals which react to tuberculin, and the other those that proved to be healthy. Each class of cattle is kept entirely separate from the other, in different stables when possible, and under the care of separate attendants, using separate utensils. The calves born of the diseased cows are removed from their mothers at birth and placed in the stable with the healthy animals where they are reared upon the milk of healthy cows or upon other milk which has been properly pasteurized. In this way the healthy portion of the herd constantly increases, while the diseased animals are disposed of as rapidly as may be deemed necessary, until finally all of them are gone and the remaining herd is composed entirely of healthy cattle. The tuberculin test is applied to the healthy herd at regular intervals, annually or semi-annually, in order to detect any cases of latent tuberculosis or recent infection which may appear.

A modification of the Bang system is Ostertag's method of suppressing tuberculosis. This system demands only a clinical examination of the original herd, with the elimination of all open cases of tuberculosis. The calves from the remaining cows are immediately removed and brought up on pasteurized milk in the same manner as in the Bang system and a new herd is thus established from the young stock. Healthy nurse cows could be used for these calves instead of feeding them on pasteurized milk. The tuberculin test is applied to this new herd at stated intervals in order that any cases of tuberculosis which may develop therein may be discovered promptly. Neither of these systems, however, has met with much favor in this country, as it required a considerable length of time and care to create a herd free from tuberculosis by either of them. Nevertheless the inauguration of Bang's or Ostertag's method in herds of valuable animals, whether they be dairy or beef breeds, is unquestionably of an economic value, and in such cases either of these systems should be encouraged. On the other hand, in ordinary beef or dairy herds, the practice of Bang's or Ostertag's method in this country has not met with much encouragement, owing to the extraordinary supervision, time and labor, as well as the loss of market milk from the reacting cows, which it involves.

In such herds the best ultimate results have thus far been obtained by the obligatory disposal of all the clinically affected cows and giving the dairyman the alternative either to pasteurize the milk from the remainder of his herd, or to be forced to refrain from selling the raw milk from the infected herd at all. In case he adopts the former method, the herd composed of diseased and healthy cattle should be placed in quarantine under the supervision of sanitary authorities, and no sales should be permitted from the herd excepting for immediate slaughter. The alternative method will compel him to dispose of his tuberculosis animals in case he refuses to pasteurize the milk. The suppression of tuberculosis could be greatly facilitated and the co-operation of many of the herd owners could be gained by a provision by which a certain percentage of indemnity could at least for a term of years be paid for the condemned animals. The scale for such an indemnity should be arranged in accordance with the final disposition of the carcass under competent inspection.

Another method of eradication should receive serious consideration as being of value in some localities. This is known as the Manchester system which is either the Ostertag or Bang system applied to localized areas or even individual farms, from which centres the work progresses to surrounding or neighboring districts and farms. Inasmuch as the animals affected with clinical tuberculosis are the greatest sources of danger in the dissemination of the disease, compulsory reporting of such cases should be inaugurated by the state, as is now done in many places in the control of human tuberculosis. Mandatory reporting of these cases and their prompt slaughter are very essential, as only by the elimination of these exceptionally dangerous cases can it be hoped to take up all the other details by which a successful control of bovine tuberculosis may be accomplished.

In conclusion your committee, having regard to the disposition of pure bred cattle, or valuable animals kept for either breeding or dairy purposes, would strongly recommend a system requiring the removal of all clinical tuberculous animals from the herd, the segregation of all calves from the remaining cows in order to establish a new, clean herd, the use of tuberclin tested nurse cows or pasteurized milk for these calves, and the periodic application of tuberculin to this newly established herd, as the only thoroughly reliable one.

(Sgd.) W. C. Edwards, *Chairman.*
John R. Mohler.
Frederick Torrance.

THE COMMISSION'S RECOMMENDATION ON ERADICATION—A COMPOSITE OF THE METHODS OF BANG AND OTHERS.

The Commission after stating the known facts regarding the nature of tuberculosis and enumerating the principles to be observed in its prevention and eradication, recommends the following plan of procedure. It is recognized that in several points there are opportunities, in order to meet individual needs, to change or modify the directions herein given. It is understood, however, that whenever such modifications are made they should conform in the greatest detail to the principles laid down in the report of this Commission. The plan has for its purpose the conservation of the herd whenever that is possible.

The control of bovine tuberculosis involves a definite procedure under two distinct and different conditions, namely: (1) where a herd of cattle is free from tuberculosis and it is to be kept so, and (2) where one or more animals in the herd are infected and the purpose is to eradicate the disease and establish a sound herd.

Procedure Under Condition (1)

The prevention of tubercular infection in cattle, free from tuberculosis, consists simply in keeping tuberculous cattle or other animals away from the sound ones; in keeping tuberculous animals out of pastures, sheds or stables where the sound ones may be kept. Healthy cattle should not be exposed to possible infection at public sales or exhibitions. Raw milk or milk by-products from tuberculous cows should not be fed to calves, pigs or other animals. Cars that have not been thoroughly disinfected should not be used for the transportation of sound cattle. Cattle that are purchased to go into sound herds should be bought from healthy or sound herds only.

Procedure Under Condition (2)

The eradication of tuberculosis from infected herds requires for conservation of the herd different procedures according to the extent of the infection. For a guide to the control of the disease tuberculous herds may be divided into three groups, namely:—

1. Where 50 per cent. or more of the animals are infected.
2. Where a small percentage (15 per cent. or less) of the animals are affected.
3. Where a large number (15 per cent. to 50 per cent.) of the animals are diseased.

In eliminating tuberculosis from infected herds the following procedure is recommended:—

Group I.

Herds where a tuberculin test shows 50 per cent. or more of the animals to to be infected should be treated as entirely tuberculous. The procedure here is as follows:—

1. Eliminate by slaughter all animals giving evidence of the disease on physical examination.

2. Build up an entirely new herd from the offspring. The calves should be separated from their dams immediately after birth and raised on pasteurized milk or on that of healthy nurse cows. This new herd must be kept separate from any reacting animals.

3. The young animals should be tested with tuberculin at about six months old, and when reactors are found at the first or any subsequent test—the others should be retested not more than six months later. When there are no more reactors at the six months test annual tests should thereafter be made. All reacting animals should at once be separated from the new herd and the stables which they have occupied thoroughly disinfected.

4. When the newly developed sound herd has become of sufficient size, the tuberculous herd can be eliminated by slaughter under inspection for beef.

Group II.

1. The reacting animals should be separated from the non-reacting ones and kept constantly apart from them at pasture, in yard and in stable.

(*a*) *Pasture.*—The reactors should be kept in a separate pasture. This pasture should be some distance from the other or so fenced that it will be impossible for the infected and non-infected animals to get their heads together.

(*b*) *Water.*—When possible to provide otherwise, reacting cattle should not be watered at running streams which afterwards flow directly through fields occupied by sound cattle. The water from a drinking trough used by infected animals should not be allowed to flow into stables, fields or yards occupied by sound animals.

(*c*) *Stable.*—Reacting cattle should be kept in barns or stable entirely separate from the ones occupied by the sound animals.

2. Calves of the reacting cows should be removed from their dams immediately after birth. Milk fed these calves must be from healthy cows; otherwise, it must be properly pasteurized. These calves should not come in contact in any way with the reacting animals.

3. The non-reacting animals should be tested with tuberculin in six months, and when reactors are found at the first six months, or any subsequent test, the other should be retested not more than six months later. When there are no more reactors at the six months' test, annual tests should thereafter be made. All reacting animals should at once be separated from the new herd and the stables which they have occupied thoroughly disinfected.

4. The milk of the reacting animals may be pasteurized and used.

5. Any reacting animal which develops clinical symptoms of tuberculosis should be promptly slaughtered.

6. An animal that has once reacted to tuberculin should under no circumstances be placed in the sound herd.

7. As soon as the sound herd has become well established, infected animals should be slaughtered, under proper inspection.

GROUP III.

Herds that come within this group should be dealt with either as in Group II., where the herd is separated, or as in Group I., where all of the animals are considered as suspicious and an entirely new herd developed from the offspring.

GENERAL PRECAUTIONS.

In *all* cases, animals that show clinical evidence of the disease should be promptly eliminated. They should be destroyed if the disease is evidently far advanced; if not, they may be slaughtered for food under proper inspection.

All milk from tuberculous cows that is used for food purposes should be thoroughly pasteurized. This means that it must be heated sufficiently to kill or to render harmless, any tubercle bacilli that may be present in it. For this, it is necessary to heat the milk for twenty minutes at 149° F., or for five minutes at 176° F. It is important that pails or other utensils used in carrying the unpasteurized milk should not be used, unless previously sterilized, for storing the milk after it is pasteurized.

When diseased animals are found, the stables from which they are taken should be thoroughly cleansed and disinfected. To accomplish this, all litter should be removed; floors, walls and ceilings carefully swept and the floors, together with mangers and gutters, thoroughly scrubbed with soap and water. Thorough cleansing before the application of the disinfectant cannot be too strongly emphasized. After cleansing, the disinfectant should be applied. A five per cent. (5 p.c.) solution of carbolic acid, a 1-1000 solution of corrosive sublimate, or a four per cent. (4 p.c.) solution of sulphuric acid may be used.

When the stable can be tightly closed, formaldehyde gas properly used is reliable and satisfactory.

If tuberculous cattle have been kept in a small yard the litter should be removed, the surface plowed and the fencing and other fixtures thoroughly cleansed and disinfected.

Lady Grey Hospital for Tuberculosis, Ottawa. Summer view.

THE LADY GREY HOSPITAL.

As a monument to the untiring efforts of the Ottawa Anti-tuberculosis Association to provide for advanced cases afflicted with this dread disease stands the Lady Grey Hospital.

The situation is in many respects ideal. On the western border of the city, within its limits, thus having all facilities the city has to offer, stands the hospital in the midst of a natural grove of maple trees, of which five acres is included. These trees not only give a completed beauty to the surroundings, but furnish that degree of shade which is so acceptable on the hot summer days. Distributed among the trees are lawn seats for such of the patients as may be strong enough to avail themselves of this comfort.

The building is a three-story structure of red brick, facing the south-west. It has spacious balconies and verandahs along the front and either end, and the doors leading on to the same are of sufficient size that the beds may be wheeled through, thus giving these sick patients all the benefits of the open air life on a verandah with as little disturbance and effort as possible. These balconies are also enclosed by wire screens, which, in preventing access of flies, gives added comfort to the sick who rest within.

The building has accommodation for forty-five patients, distributed as follows: Eighteen single-bed rooms, each completely furnished with bed, dresser, chair, table, screen and reclining chair; six three-bed wards, furnished in a manner similar, except the dressers; also one five-bed and one four-bed ward.

The prevailing interior finish to the woodwork is white, with floors finished in the natural wood and waxed. To match this, the furniture is finished in white enamel, all of which gives a unique appearance of cleanliness to the whole interior.

The furnishings were supplied by the Daughters of the Empire, and that in a very substantial and ample manner.

On the 15th February, 1910, the Hospital was formally opened by His Excellency the Governor-General.

At the same time the institution was handed over to the city to maintain, according to former agreement between the Association and the City Council, the Association to build and equip and the city to maintain for all time. This transaction meant a gift to the city of some sixty thousand dollars.

The credit of this is due to the energies of the President of the Association, Mr. Jas. Manuel, and those associated with him in the noble work.

In connection with the institution is a training school for nurses, which is in affiliation with Bellevue Hospital, New York, where nine months of the three years' course is spent in Surgery, Obstetrics and Diseases of Children, in addition to the prescribed work here.

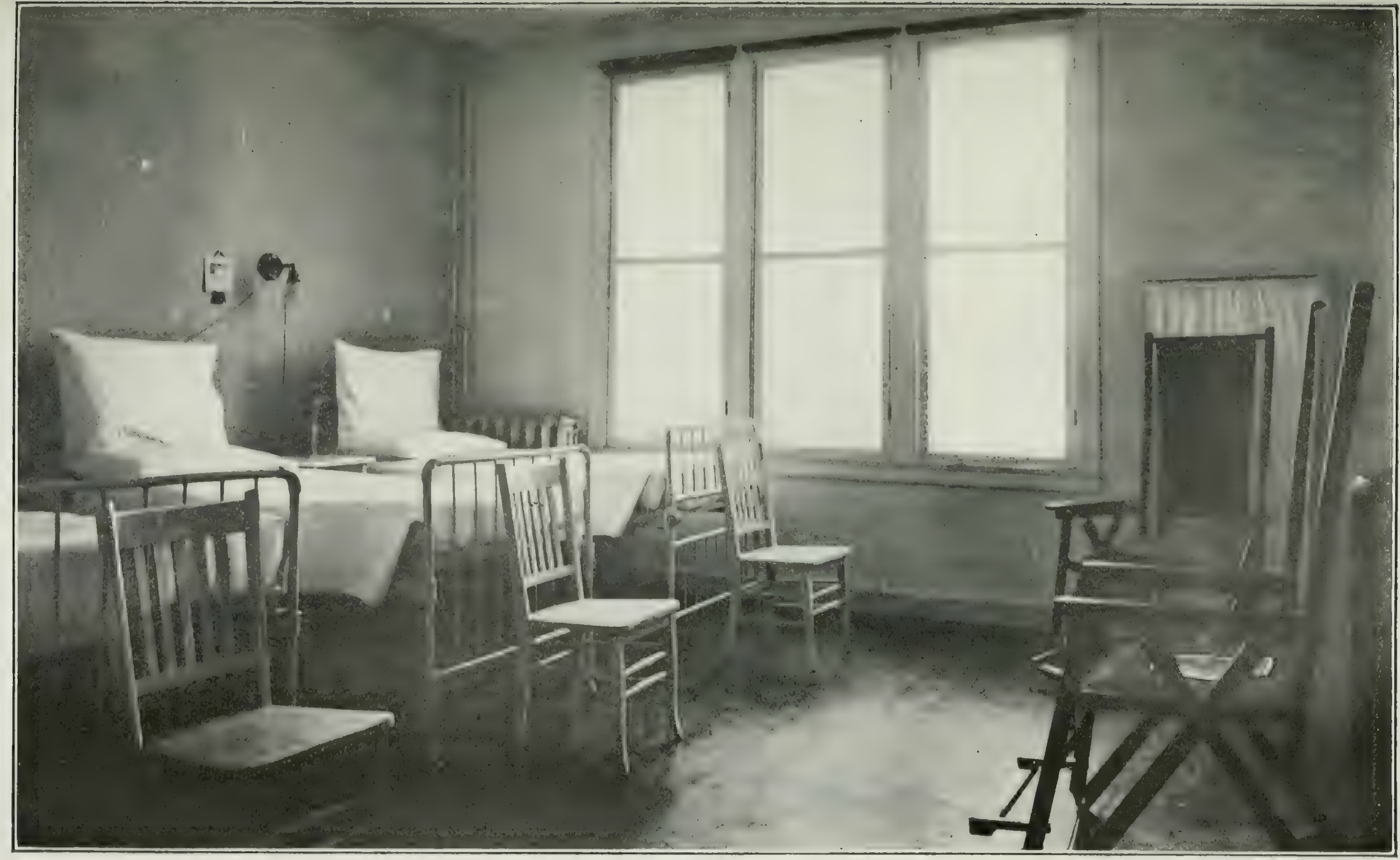
The Hospital is under the management of a committee, consisting of the Mayor of Ottawa as Chairman; the four members of the Board of Control, and four members of the Executive of the Anti-Tuberculosis Association.

The Medical Superintendent is Dr. J. K. M. Gordon, and the Lady Superintendent is Miss J. K Argue.

It might be further stated that this Association is seriously considering the further expansion of the crusade against tuberculosis by making provision for the incipient and moderately advanced cases. When this shall be accomplished, Ottawa will have one of the most complete organized efforts in coping with and stamping out this dread malady in the community at least of our beloved Canada.

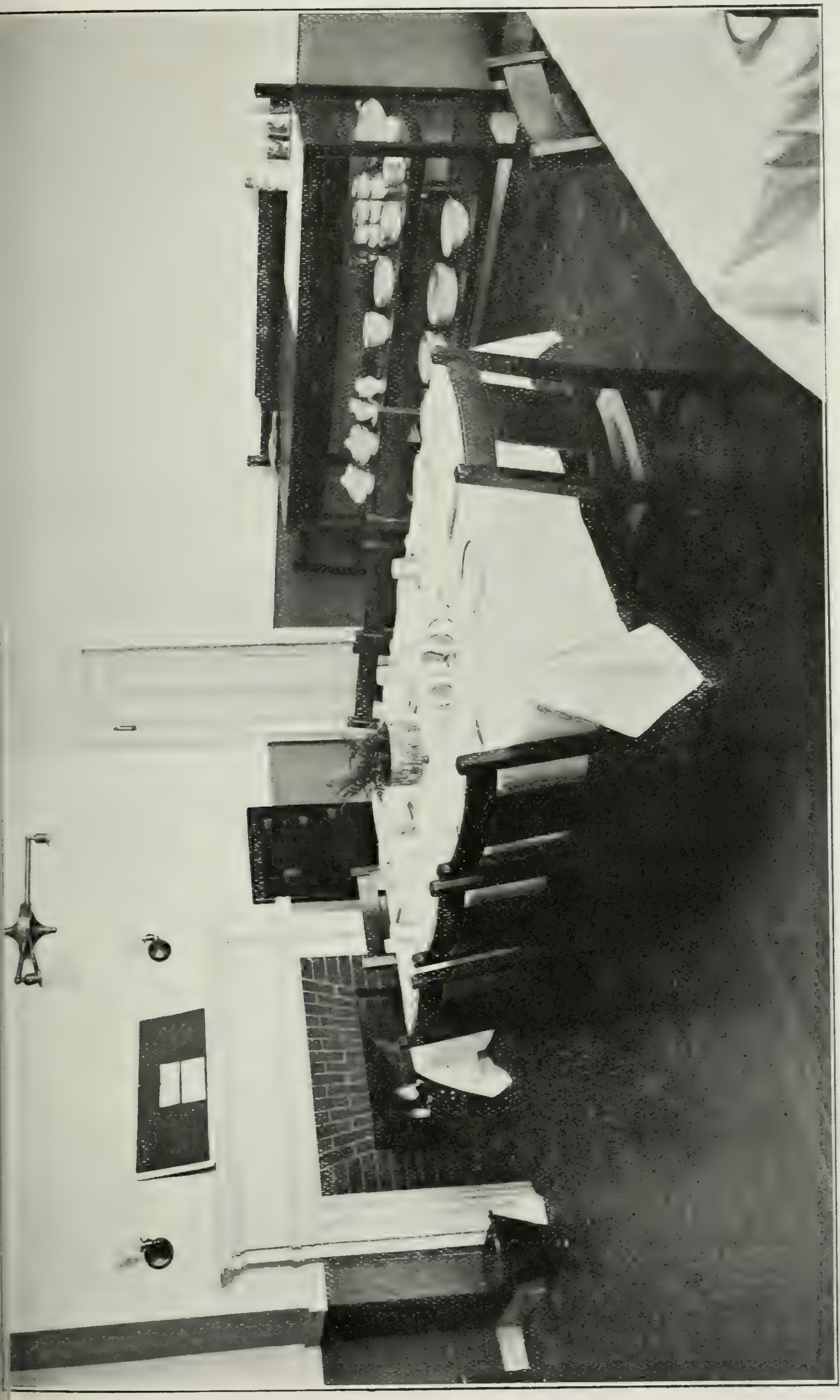
Lady Grey Hospital for Tuberculosis, Ottawa. Winter view,

Single Bedroom, Lady Grey Hospital.

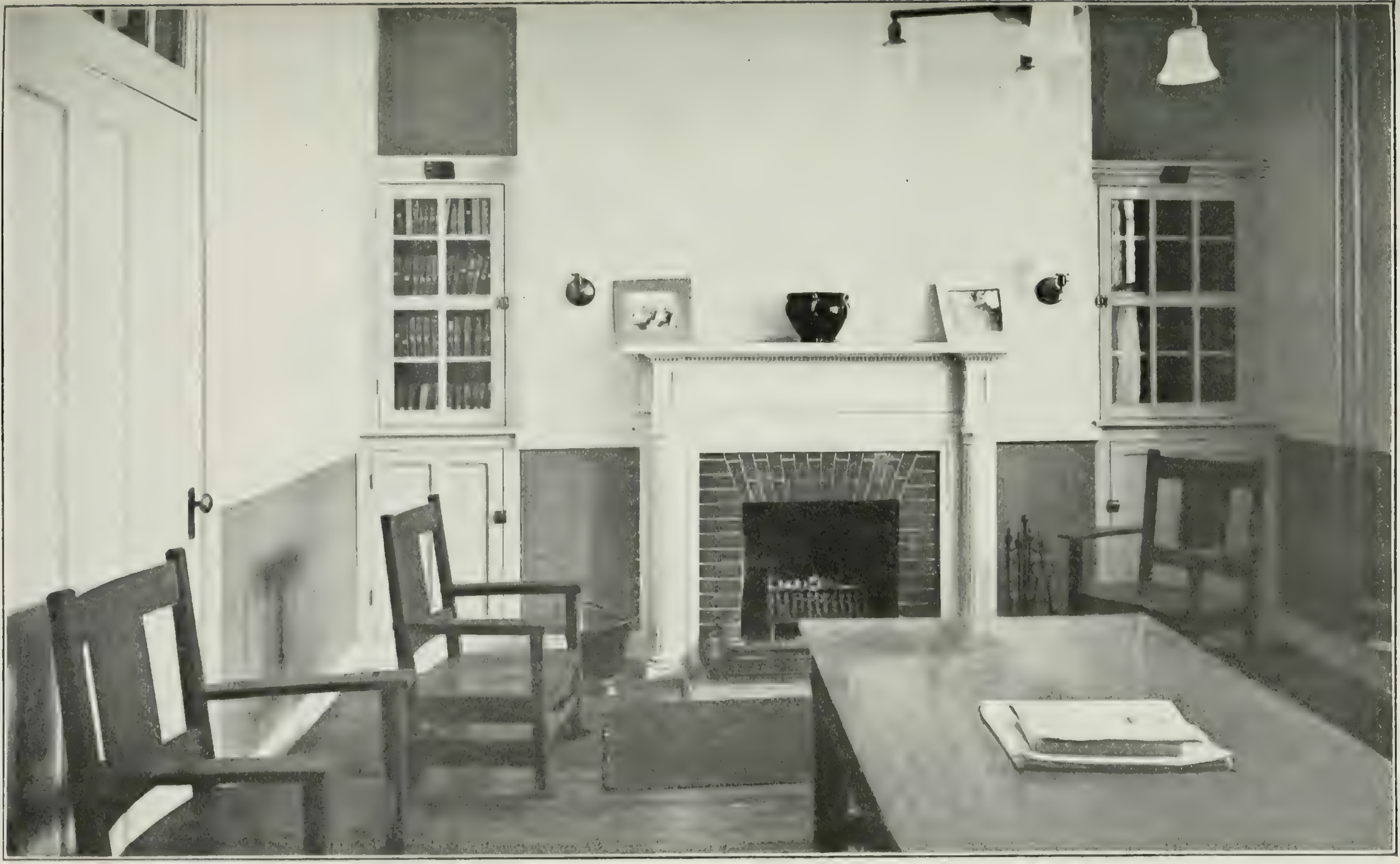


Three-bedded Room, Lady Grey Hospital.

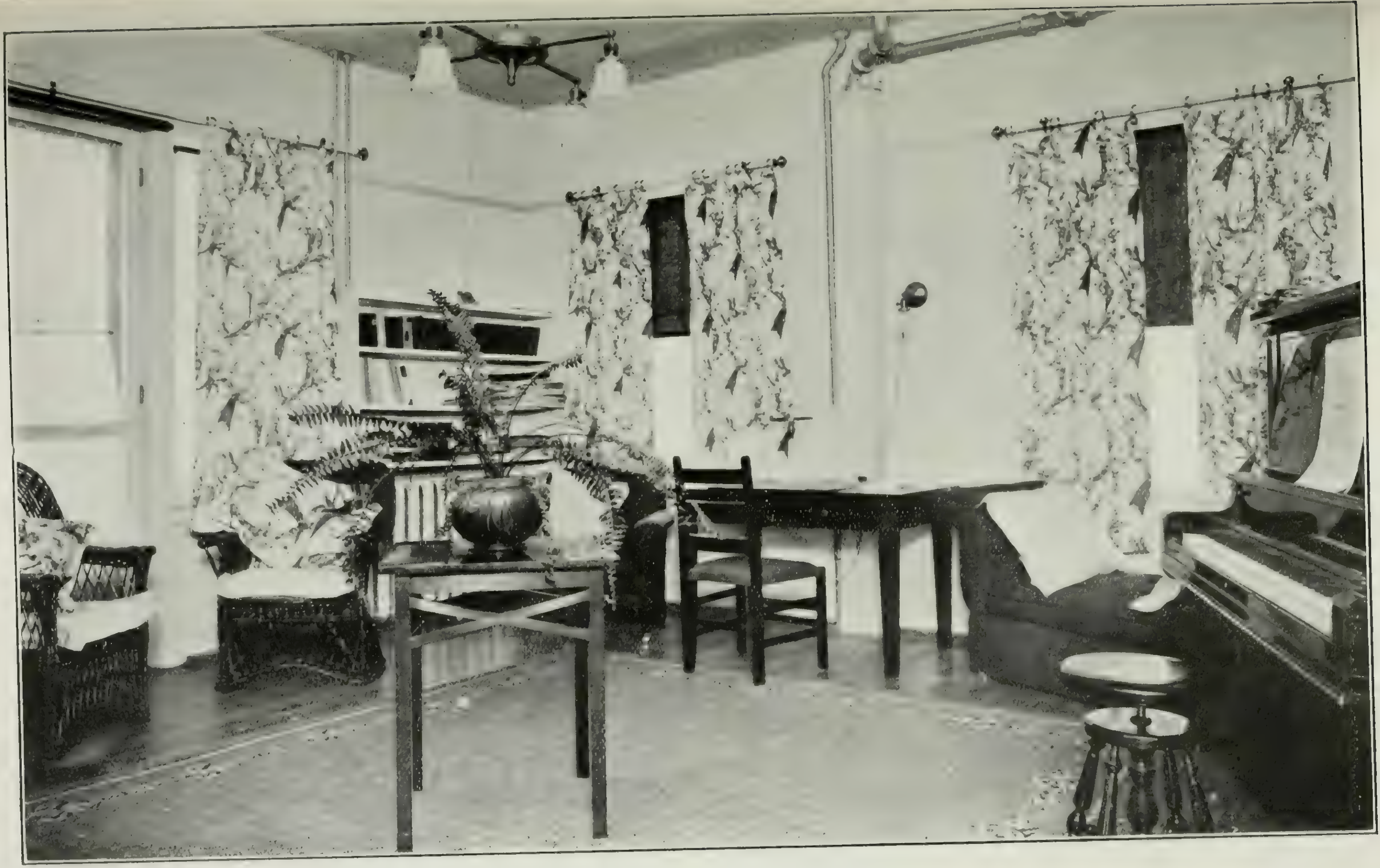
Patients' Treatment Room, Lady Grey Hospital.



Dining-room, Lady Grey Hospital.



Reception and Board Room Library for Patients. Lady Grey Hospital.



Nurses' Sitting-room, Lady Grey Hospital.

LABORATORY REPORT.

By John A. Amyot, M.B.

To the Chairman and Members of the Provincial Board of Health.

Gentlemen,—I have the honor to present you the following report of the work done in the Laboratories of the Provincial Board of Health for the months of October, November, and December, 1910.

SYNOPTIC TABLE SHOWING NUMBER OF SPECIMENS EXAMINED DURING THE MONTHS OF OCTOBER, NOVEMBER AND DECEMBER, 1910.

	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Months.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
October	7	4	41	71	42	111	34	98	52	10	152	622
November	10	16	48	82	37	115	34	77	47	1	117	584
December	6	8	37	62	37	106	4	52	28	3	50	393
	23	28	126	215	116	332	72	227	127	14	319	1,599
	51		341		448		299		127	333		1,599
	392											

In all 1,599 samples were examined. Of these 392 were of swabs suspected of diphtheria; 448 of sputa suspected of containing bacillus of tuberculosis; 299 bloods from patients suspected to be suffering from typhoid fever; 333 samples of water from various municipalities, and 127 miscellaneous samples. Of these 127, 35 were milk samples, with request to estimate the butter fat and make a search for preservatives. Preservatives were not found in any of them. Of the samples, 11 showed 3.5 per cent. of butter fat, eight showed 4 per cent., three showed 4.5 per cent., one showed 5 per cent. and one 5.5 per cent., seven showed 3 per cent. and 4 showed 2.5 per cent. Thus, only eleven out of the thirty-five were below the generally accepted standard of 3.5 per cent. Of course, allowance must be made for the method of collection in these samples. I might mention that this lot shows a much larger number below the standard 3½ per cent. than has been usual with us.

Two others of the miscellaneous samples were of drainage from a starch works on the Grand River, sent by the Department of Fisheries, to see whether the effluent was harmful to fish. It contained organic matter in quantity about five times more than a strong city sewage. Of course, if this were being poured into the river in very large quantities, aside from any harmful chemicals in it, it would be injurious to fish from the fact that it would take up a very large part of the dissolved oxygen in the water, thus either asphyxiating or driving the fish out of the neighbourhood.

During the three months, also amongst the miscellaneous specimens, are included eighteen dogs' brains examined for the presence of Negri bodies in an endeavour to come to a diagnosis in cases of suspected rabies. These were from eighteen different municipalities. Sixteen of these were negative. In one case the symptoms of the animal, as described by the sender, were suspicious, though no Negri bodies were found. On account of the symptoms the patient bitten was advised to take the Pasteur vaccination. Two proved positive. Both of these during the week after the quarrantine were removed. There have been no positives since. The last patient, making the seventy-second since the beginning of this outbreak, was finished with on the 3rd of January.

Three disinfectants were examined for their sterilizing power for the Department of Charities.

One sample of blood from an animal suspected of having died from anthrax was examined, but proved negative.

The nasal discharge from a returned patient from Africa was examined for leprosy. This also proved negative.

From West Toronto the discharge from an enlarged gland of a horse was investigated for glanders. This also proved negative, even on animal inoculation.

During the three months fifteen samples of water were bacteriologically examined for the City of Ottawa. Fourteen of these showed the absence of Colon bacilli. One water showed their presence. Three samples were examined chemically. Of these, one showed excessive organic matter and two a quantity not above the normal.

All of which is respectfully submitted.

JOHN A. AMYOT.

CHLORINATION OF SMALL QUANTITIES OF WATER.

Out of these tables I would extract for comment the following items:—

1. "A Simple Method of Water Purification": Drs. Nasmith and Graham carried on a series of investigations looking to the disinfection of such small quantities of drinking water as would be used by a private family or by campers or prospectors or miners in the field. Waters of various types have been experimented with, and the following recommendations made to meet these conditions:—

A SIMPLE METHOD OF WATER PURIFICATION.

By G. G. Nasmith, Esq., Ph.D., and R. R. Graham, Esq., M.B.,

Laboratory of the Provincial Board of Health.

"A level teaspoonful of chloride of lime should be rubbed into a teacup of water. This solution should be diluted with three cupfuls of water, and a teaspoonful of the whole quantity should be added to each two gallon pail of drinking water. This will give .4 or .5 parts of free chlorine to a million parts of water and will in ten minutes destroy all typhoid and colon bacilli or other dysentery-producing organisms in the water. Moreover, all traces of the chlorine will rapidly disappear.

"This method of purification has been tested with Toronto Bay water inoculated with millions of bacteria. Every germ has been destroyed and it has been unnecessary to boil the water.

"This method should be very valuable for miners, prospectors, campers, and those living in summer resorts where the condition of the waters might not be above suspicion.

"Additional copies may be had from

"John W. S. McCullough, M.D.,
"Chief Health Officer for Ontario."

Then follows the details of the experiments on which this recommendation has been made.

There developed a rather interesting fact in this connection during the experiments. It was found for instance that, while Toronto water was being irregularly dosed with calcium hypochlorite, sometimes the small quantity recommended in the publication made that the chlorine could be tasted. This would indicate that though this water is hard (132 per million) the material decomposing the hypochlorite is present in a limited quantity.

Appended is the complete paper dealing with this subject:—

A SIMPLE METHOD OF PURIFYING ALMOST ANY INFECTED WATER FOR DRINKING PURPOSES.

By G. G. Nasmith, M.A., Ph.D.,

Chemist of the Board of Health of Ontario,

and R. R. Graham, M.B.,

Assistant Chemist.

Since 1897, when Dr. Woodhead sterilized the water supply system of Maidstone, England, by a solution of chloride of lime, during a typhoid outbreak, this agent has been used more or less spasmodically for similar purposes. In 1898, Kanthack showed that .3 to .36 parts of free chlorine in one hundred thousand parts of sewage effluent reduced the number of bacteria from innumerable to 50 per cubic centimetre.

Two years ago Jersey City in the United States installed the first system for continuously purifying its municipal water supply by means of chlorine in the form of chloride of lime, the amount of available chlorine being .3 parts per million parts of water. The success of this method for one year has established its efficacy, and similar plants are now being installed at various other places. The method is so cheap, so efficient, and the agent used so harmless, that there would seem to be a great field for its usefulness in this and other countries. We have shown that .3 parts of chlorine in a million parts of water, or roughly one pound of chloride of lime to a million pounds of water (500 tons or 100,000 gallons) will not only destroy typhoid and colon bacilli, but practically all bacteria in water except a few spore formers.

It is a valuable means of sterilizing water, because chloride of lime may be bought almost anywhere, is very cheap, in the infinitesimal quantity used, and not only is it absolutely harmless, but leaves no taste in the water, and with a few directions may be used by anyone to render an infected water safe for drinking purposes.

The writers have worked out a simple method, which can be used by miners, prospectors or campers in Northern Ontario, or elsewhere, to purify immediately and on the spot, any water which may be dangerous to drink. For armies in the field such a method should prove invaluable, for every soldier could easily carry a couple of ounces of the chloride of lime, and sterilize his own drinking water; hence the experience with Enteric Fever in South Africa need never be repeated.

The method is as follows:

1. Take a teaspoonful of chloride of lime, containing about one-third available chlorine and remove the excess of powder by rolling a pencil, or other round object along the top of the spoon, or by flattening it with a penknife blade so that the excess will be squeezed off.

2. Dissolve the teaspoonful of chloride of lime in a cupful of water, making sure that all lumps are thoroughly broken up, and to it, in any convenient receptacle, add three more cupfuls of water.

3. Stir up the mixture, allow to stand for a few seconds in order to let any particles settle and this stock solution, if kept in a tightly stoppered bottle may

be used for four or five days, and add one teaspoonful of this milky stock solution to two gallons of the water to be purified in a pail or other receptacle. Stir thoroughly in order that the weak chlorine solution will come into contact with all of the bacteria and allow to stand for ten minutes. This will give approximately one-half part of free chlorine to a million parts of water, and will effectually destroy all Typhoid and Colon bacilli or other dysentry producing bacilli in the water. The water will be without taste or odor, and the trace of free chlorine added rapidly disappears.

The writers have followed this procedure repeatedly, using only the simple apparatus mentioned, consisting of a teaspoon, a cup and a two gallon pail. The water in the pail has been inoculated with Typhoid and Colon bacilli and examined before and after chlorination. The result was invariably the same, namely that all Typhoid and Colon bacilli were destroyed.

No.	Lake Ontario water. Bacteria per cc. at 20°C.	Lake Ontario water + Typhoid bacilli Bacteria per cc. at 37 C.	Lake Ontario water + Typhoid + 1 part chlorine per million. Bacteria per cc. at 37°C.
1	92	2,144	1
2	84	26,100	1
3	176	15,100	6
4	154	17,000	2
	Substituting Colon bacilli for Typhoid.		
5	65	95	0
6	132	2,250	1

The method is also applicable to the sterilization of wells which have been infected, provided, of course, that the source of the infection has been removed. It would obviously be futile to sterilize a well situated in a farmyard from which organic matter and bacteria are constantly draining into the well.

If one knows the diameter and depth of the water in the well in feet, the amount of chloride of lime may be easily estimated, for instance, the writer wished to destroy the bacteria in the well at his summer cottage, six feet wide by four feet deep. The formula would be (radius) squared x 22/7 x depth of the water, = 3 x 3 x 22/7 x 4 = 113 cubic feet of water in the well.

One and a half pounds of chloride of lime to 100,000 gallons will give roughly one-half part of available chlorine in a million parts of water, or one pound to 66,000 gallons.

The chloride of lime was mixed with water, diluted and poured into the well and then thoroughly mixed by plunging a long pole with a couple of strips of wood nailed across one end, up and down in the water.

The water before chlorination contained 950 bacteria per cubic centimetre with colon bacilli present; after chlorination there were only 9 bacteria, no colon bacilli.

The water of Sturgeon Lake, which is a typical brown Northern Ontario water, was treated with one part of chlorine to a million parts of water, according to the simple method outlined with the result that the raw, riley water count of 15,880 per cc. was reduced to 8 cc.

Toronto Bay water taken from the slip at Aykroyd boat-house was chlorinated on the spot in a pail found in the boat-house with the following results.

Raw bay water.	Colon bacilli.	Chlorinated with 1 part chlorine per million.	Chlorinated with .5 part chlorine per million.	Colon bacilli.
16,000	Present	18 colonies		Absent.
25,000	"	9 "		"
18,000	"		13 colonies	"

Another series was made to determine what amount of chlorine could be added to a water infected with Typhoid and Colon bacilli, which would show a decided excess of chlorine by the Potassium Iodide, starch reaction, and yet not be detected by the senses of taste or smell.

Chlorine in parts per million.	Taste.	Odor.	Typhoid, colon and other bacteria per cc. at 37 C.	Iodide test after ½ hour.
0	None	None	5,452	None.
.5	"	"	0	Strong.
.33	"	"	0	"
.165	"	"	0	"
.125	"	"	0	Slight.

This showed conclusively that more than .125 parts per million of free chlorine will destroy Typhoid bacilli in Lake Ontario water, if properly mixed, and that though the Iodide test shows an excess of free chlorine in half an hour, not the slightest taste or odor could be detected by four laboratory workers in strengths up to .5 parts of free chlorine per million when the taste became evident.

Precautions to be observed.

Chloride of lime deteriorates rapidly when kept in cardboard packages or exposed to air. If fresh from the factory it should contain about 1-3 available chlorine. Of six pound packages obtained at random from the shops, three were found of high strength, although the others would be suitable if more of the stock solution were used.

Manufacturer.	Per cent. of available chlorine found.	Nature of package.
Mendlesohn Sons "Acme"	33.0	Zinc.
T. Eaton Drug Co.	32.5	Zinc.
Lyman's	29.1	Cardboard, resin lined.
Chemical Laboratories, Ltd.	21.7	Cardboard.
Moody's	20.0	"
National Drug Co.	19.5	"

If the weak variety only is obtainable, then one and a half teaspoonfuls of the stock solution should be added to two gallons of water instead of one teaspoonful.

If the chloride of lime powder be kept in a tightly stoppered bottle it will retain its strength for a long period. The prospector would only need to carry two small bottles, one for the powder and one for the stock solution.

It is very important that the stock solution should be thoroughly mixed with the water to be purified in order that no bacteria may escape the chlorine.

Silt or mud will not materially affect the action of the chlorine. The chlorine will not, however, enter lumps or particles of organic matter, so that if such material is present it should be strained off or allowed to settle and the clear water used for sterilizing.

Waters containing hydrogen sulphide must be given large quantities of chlorine solution.

MILK.

2. Of the miscellaneous specimens 183 milks were examined for 11 municipalities. The number showing butter fat above 3½ per cent. was 118. The number showing above 4 per cent. was 21. The number showing butter fat below 3½ per cent. was 65.

None showed either formaldehyde or borates.

MILK SPECIMENS EXAMINED CHEMICALLY FROM JANUARY 1ST, 1910, TO APRIL 1ST, 1910.

Laboratory No.	Specimen number.	Town.	Fat.	Formaldehyde.	Borates.
6,957	....	Toronto.	4.50	None.	None.
7,086	....	"	4.00	"	"
7,087	....	"	4.50	"	"
7,088	....	"	3.75	"	"
7,090	....	"	5.00	"	"
7,108	....	Milton.	4.25	"	"
7,528	....	Toronto.	4.00	"	"
7,577	1	Fort William.	3.00	"	"
7,578	2	"	4.00	"	"
7,579	3	"	4.00	"	"
7,580	4	"	....	Present.	"
7,581	5	"	7.00	"	"
7,582	6	"	3.75	None.	"
7,583	7	"	3.50	"	"
7,584	8	"	5.00	"	"
7,585	9	"	4.50	"	"
7,586	10	"	3.75	"	"
7,630	1	Caledonia.	10.50	"	"
7,635	....	Toronto.	4.75	"	"
7,636	....	"	4.75	"	"
7,637	....	"	4.50	"	"
7,828	1	Bridgeburg.	3.75	"	"
7,829	2	"	3.50	"	"
8,036	1	Toronto.	5.25	"	"
8,037	2	"	5.50	"	"
8,347	1	"	4.50	"	"
8,348	2	"	5.00	"	"
8,349	3	"	4.50	"	"
8,411	....	"	3.00	"	"
8,540	1	Simcoe.	3.75	"	"
8,541	2	"	4.00	"	"
8,542	3	"	4.00	"	"
8,543	4	"	3.50	"	"
8,544	5	"	3.75	"	"
8,545	6	"	3.50	"	"
8,518	....	Toronto.	4.50	"	"
8,652	....	"	3 50	"	"
8,653	....	"	4.00	"	"
8,824	....	Kirkfield.	12.50	"	"

3. Of the 34 sewage specimens analysed 28 were from the treatment plant at the Woodbine, Toronto. On the whole this septic tank contact bed plant shows a reduction of close on to 70 per cent. over the crude sewage entering. So far as the organic material is concerned, this is like reducing the sewage to 30 per cent. of what it was before. From the bacteriological standpoint, and therefore the sanitary standpoint, it is not in the same proportion made safer. It could be improved immensely and very easily by treatment with calcium hypochlorite, as has been so successfully done at Baltimore practically, and in an experimental way at Chicago and at the Institute of Technology at Boston, and at the Experimental Station at Lawrence, Mass.

The analyses follow in detail in the attached table.

RESULTS OF ANALYSES DONE ON SEWAGE COLLECTED FROM THE WOODBINE SEWAGE DISPOSAL PLANT OF TORONTO.

Sewage.

Lab. No.	Source.	No.	Sample.	Free NH_3	Alk. NH_3	Ox Con.	Cl.
8,797	Woodbine Sewage Plant	1	Contact bed	5.25	1.0	....	....
8,798	“ “ “	2	“ “	4.25	1.5	....	....
8,799	“ “ “	3	“ “	4.50	1.25	....	....
8,800	“ “ “	4	“ “	4.25	1.75	....	....
8,801	“ “ “	....	Crude	6.25	4.75	....	....
8,802	“ “ “	2	Septic tank	11.5	1.50	....	....
8,803	“ “ “	3	“ “	12.00	2.25	....	....
549	Woodbine, Toronto	1	Contact bed	8.1	1.15	24	....
550	“ “	2	“ “	6.3	1.75	22	....
551	“ “	3	“ “	11.25	2.15	32	....
552	“ “	4	“ “	10.25	1.25	16	....
553	“ “	....	Septic tank No. 2	8.15	4.15	38	....
554	“ “	....	“ “ No. 3	7.00	3.85	52	....
555	“ “	....	Raw	8.50	4.50	89	....
1,572	Woodbine, Toronto	....	Raw	8.25	2.15	140	....
1,573	“ “	....	Septic tank No. 2	18.00	3.30	17	....
1,574	“ “	....	“ “ No. 3	19.00	1.65	21	....
1,575	“ “	5	Contact bed	7.75	1.15	3	....
1,576	“ “	6	“ “	5.25	1.65	....	....
1,577	“ “	7	“ “	6.25	1.15	....	....
1,578	“ “	8	“ “	6.75	4.25	....	....
2,044	Woodbine, Toronto	....	Crude sewage	12.4	1.25	92	80
2,045	“ “	....	Septic tank No. 2	15.5	3.25	38	90
2,046	“ “	....	“ “ No. 3	17.5	2.25	8	55
2,047	“ “	1	Contact bed	10.75	1.75	9	60
2,048	“ “	2	“ “	9.1	2.1	10	70
2,049	“ “	3	“ “	10.5	2.1	12.2	70
2,050	“ “	4	“ “	11.5	3.25	9.4	60

1. From July 16th to August 6th, 1910, bacteriological examinations were made to estimate the effect of chlorination as a means of purifying the town water supply of Eglinton (North Toronto). The number of bacteria were reduced irregularly, but the results so far as the colon bacilli were concerned were excellent. Whereas the raw water showed absence of the colon bacillus in 1 c.c. quantities but once, they were present but once in the chlorinated water.

ANALYSIS BACTERIOLOGICAL, SHOWING EFFECT OF CHLORINATION AT EGLINTON.

Date.	Raw Water.			Chlorinated Water.	
1910.	Source.	Count per c.c.	B. Coli.	Count per c.c.	B, Coli.
July 16	Running stream	1,660	+	67	—
" 16	Top spring	56	+		
" 16	New spring	9,000	+		
" 18	Running stream	960	+	140	—
" 19	Running stream	470	+	21	—
" 19	Main spring	60	−		
" 19	New spring	3,920	+		
" 20	Running stream	870	+	8	—
" 21	Running stream	746	+	16	—
" 21	Main spring	56	+		
" 21	New spring	1,440	+		
" 22	Running stream	3,500	+	55	—
" 23	Running stream	600	+	40	—
" 26	Running stream	1,000	+	1,100	+
" 27	Running stream	986	+	130	—
" 28	Running stream	1,200	+	100	—
" 28	Main spring	133	+		
" 28	New spring	9,000	+		
" 19	Running stream	475	+	31	—
" 30	Running stream	840	+	129	—
Aug. 2	Running stream	450	+	12	—
" 3	Running stream	520	+	500	—
" 5	Running stream	900	+	7	—
" 6	Running stream	700	+	6	—

Chemical analysis, June 27, 1910:—Free NH_3 .035, Alk. NH_3 .09. Oxy. consumed = 2.20. Chlorine 10. Total hard. 333 or 23.31 ; temp. hard. 279 or 19.43 ; perm. hard, 54 or 3.78°.

5. Liquor analyses—176 samples of liquor were analysed quantitatively for alcohol. One of the staff had to go to Owen Sound to give evidence in one of the cases. The attached tables show the percentage of alcohol found in each.

LIQUOR SPECIMENS EXAMINED FOR LICENSE BRANCH FROM JANUARY 1st, 1910, TO APRIL 1st.

Laboratory Number.	County.	Alcohol.	Laboratory Number.	County.	Alcohol.
6821	Renfrew	1.59	7917	Algoma	7.02
6881	Peel	10.35	7918	"	3.90
6882	"	12.02	7919	"	4.98
6883	"	11.91	7920	"	5.36
6974	Simcoe	1.82	7921	"	5.34
7035	York	3.52	7922	"	8.51
7036	"	5.06	7923	"	5.97
7130	Simcoe	5.43	7924	"	9.97
7327	Brant	5.09	7925	"	6.81
7328	"	.94	7826	"	5.74
7329	"	1.26	7927	"	6.51
7320	"	2.47	7928	"	1.29
7331	"	1.77	7929	"	9.90
7332	Welland	5.06	7930	"	1.57
7333	"	7.79	7931	"	5.93
7334	Simcoe	2.36	7932	"	1.69
7335	Grey	3.50	7933	"	11.12
7336	"	3.39	7934	"	5.92
7337	"	3.62	7935	"	10.49
7338	"	2.71	7936	"	7.36
7339	Simcoe	9.62	7937	"	5.74
7340	"	9.46	7938	"	5.51
7362	Welland	6.85	7939	"	5.67
7384	....	4.18	7940	"	5.69
7404	Wellington	1.77	7968	Welland	7.83
7405	"	1.29	8232	Thunder Bay	.28
7406	Norfolk	8.04	8233	" "	8.06
7407	Wellington	1.75	8234	" "	9.31
7447	Simcoe	....	8235	Wentworth	.17
7492	Huron	68.69	8306	"	76.61
7493	Wellington	71.27	8307	York	7.11
7522	"	72.27	8374	"	1.61
7563	Victoria	.21	8375	"	2.19
7564	"	10.51	8376	Algoma	4.36
7565	"	2.26	8377	"	3.75
7642	Bruce	23.48	8378	"	1.55
7753	York	6.57	8379	"	4.36
7754	"	5.74	8380	"	4.36
7839	Grey	2.71	8441	Wentworth	76.67
7840	"	2.20	8442	"	31.17
7841	"	1.87	8443	"	51.62
7858	Wellington	78.00	8444	Lambton	11.28
7859	"	77.39	8510	Nipissing	87.46
7860	Wellington	74.39	8622	"	7.57
7908	Algoma	5.99	8623	"	7.37
7909	"	5.50	8650	York	126.61
7910	"	7.34	8651	"	25.02
7911	"	7.71	8782	"	1.91
7912	"	4.13	8783	Nipissing	16.83
7913	"	5.32	8808	....	73.55
7914	"	4.97	8809	Parry Sound	19.68
7915	"	5.23	8810	" "	10.19
7916	"	5.01			

LIQUOR ANALYSES.

Date.	Lab. No.	From Inspector	Proof Spirits.	Date.	Lab. No.	From Inspector	Proof Spirits.
April 2	8,622	W.S. Blackwell	3.46	June 22	83	A. Greene	8.04
" 2	8,623	" "	7.37	" 22	85	Matt. C. Beckett	5.18
" 5	8,650	Johnson	126.61	" 22	86	" "	5.78
" 5	8,651	"	25.02	" 22	87	" "	6.02
" 11	8,782	Le Febere	1.91	July 4	277	" "	10.63
" 11	8,783	" "	16.83	" 4	278	P. C. Wright	80.26
" 12	8,808	Stewart	73.55	" 4	279	A. Coorian	3.20
" 12	8,809	Quinn	19.68	" 5	302	R. J. Markle	9.27
" 12	8,810	"	10.19	" 5	303	Ransome	29.81
" 15	8,885	Craig	9.28	" 7	369	W. Fisher	11.98
" 19	8,929	McManus	7.01	" 7	370	J. Lefebvre	4.25
" 19	8,930	"	6.74	" 12	500	J. W. Oakes	.89
" 23	9,016	Markle	2.01	" 12	501	Jno. A. Ayearst	94.51
" 23	9,017	"	.50	" 12	502	" " "	52.22
" 23	9,018	"	.0	" 12	503	J. W. Oakes	.61
" 23	9,019	"	.64	" 12	504	Jno. A. Ayearst	65.33
" 23	9,020	"	2.17	" 16	611	R. Henderson	.42
" 23	9,039	Beckett	6.99	" 16	612	"	.19
" 23	9,040	"	7.11	" 16	613	"	.0
" 23	9,041	"	7.18	" 16	614	"	.68
" 26	9,059	W. S. Blackwell	7.86	" 18	615	R. J. Markle	.24
" 27	9,097	Cuddy	11.11	" 18	616	" "	.73
" 27	9,125	Beckett	7.04	" 21	747	J. Stewart	.15
" 27	9,126	"	7.34	" 21	748	"	1.64
" 27	9,124	"	5.96	" 21	749	"	.42
May 4	9,210	Moore	1.05	" 21	750	"	1.10
" 4	9,211	"	3.08	" 21	751	"	.08
" 9	9,281	Markle	6.88	" 25	764	Creighton	5.97
" 14	9,388	Eacrett	1.62	" 25	765	Van Norman	5.25
" 14	9,389	"	1.05	" 25	766	"	3.08
" 14	9,390	"	.94	" 25	767	"	3.83
" 15	9,416	Kirkpatrick	1.57	" 25	768	McMann	5.71
" 15	9,417	"	.89	" 27	847	W. Fisher	30.17
" 16	9,441	E. Scafe	2.90	" 27	848	"	25.13
" 23	9,529	Police Constable	20.83	" 27	815	Matt C. Beckett	6.85
" 23	9,530	Ransome	7.11	" 27	816	" "	6.82
" 23	9,569	Markle	7.74	" 27	817	" "	5.88
" 23	9,570	"	9.81	" 27	818	" "	6.43
" 23	9,571	"	8.34	" 27	819	" "	6.67
" 26	9,579	Fisher	1.26	" 28	820	" "	12.63
" 26	9,580	McDonald	69.57	" 28	891	R. J. Markle	2.97
" 26	9,581	"	7.86	" 28	849	C. Van Noman	1.96
" 26	9,582	"	3.45	" 28	850	" "	7.43
" 26	9,583	"	18.29	" 28	851	" "	4.39
" 26	9,584	"	48.98	" 28	852	" "	3.69
June 1	9,700	Markle	2.19	" 30	1,083	Quinn	20.14
" 1	9,701	"	1.17	" 30	1,084	Matt. C. Beckett	.64
" 1	9,702	"	1.52	" 30	1,085	" "	3.76
" 6	9,786	A. T. Rowell	19.61	Aug. 2	1,119	R. J. Markle	2.96
" 7	9,805	R. J. Markle	1.03	" 8	1,131	D. Orr	11.56
" 7	9,806	" "	6.20	" 9	1,153	J. Taber	1.64
" 7	9,807	" "	1.20	" 9	1,154	"	.71
" 7	9,808	" "	3.92	" 9	1,155	"	.61
" 7	9,809	" "	1.13	" 9	1,157	Jno. A. Ayearst	11.86
" 7	9,810	" "	1.26	" 10	1,170	J. Stewart	19.83
" 7	9,811	W. Fisher	1.82	" 10	1,167	J. S. Sturdy	43.23
" 7	9,812	"	2.71	" 10	1,168	"	92.26
" 5	9,862	Matt. C. Beckett	118.38	" 10	1,169	"	82.43
" 10	9,879	Jno. A. Ayearst	1.13	" 12	1,215	W. S. Blackwell	6.04
" 10	9,880	" "	1.05	" 12	1,216	J. Stewart	2.07
" 10	9,878	" "	12.70	" 12	1,236	Van Norman	2.21
" 10	9,881	" "	3.15	" 12	1,237	McKay	6.48
" 13	9,909	" "	8.76	" 12	1,238	"	5.97
" 13	9,910	W. Fisher	1.24	" 13	1,356	Jas. Sturdy	46.51
" 16	9,949	W. S. Blackwell	6.48	" 13	1,357	A. Coorian	10.81
" 16	9,962	A. Greene	15.89	" 13	1,358	Campbell	1.61

LIQUOR ANALYSES.—*Continued.*

Date.	Lab. No.	From Inspector	Proof Spirits.	Date.	Lab. No,	From Inspector	Proof Spirits,
Aug, 15...	1,403	House	12.24	Sept. 26...	2,226	Jno. A. Ayearst ..	.54
" 15...	1,404	John A. Ayearst.	14.49	" 26...	2,225	" "	23.06
" 25...	1,490	J. Stewart.......	23.29	" 26...	2,224	Partridge........	23.43
" 25...	1,491	McManus........	24.00	" 26...	2,223	Jno. A. Ayearst..	4.60
" 25...	1,492	J. Stewart.......	0.00	" 26...	2,222	" "	7.51
" 26...	1,505	J. Stewart.......	10.49	" 26...	2,402	" "	8.83
" 27...	1,720	Ransome	6.90	" 28...	2,255	Nicholson	6.78
" 27...	1,721	Issac Waldick....	4.46	" 28...	2,254	"	6.81
Sept.15...	1,925	A. Coorian	8.56	Oct. 11...	2,527	Matt. C. Beckett.	7.25
" 15...	1,926	"	8.34	" 11...	2,529	Sloan............	6.58
" 15...	1,927	P. C. Martin	17.78	" 11...	2,528	Simpkin, P. C...	6.74
" 17...	1,991	Jno. Ayearst.....	3.50	" 11...	2,531	Matt. C. Beckett	7.40
" 17...	1.992	"	3.83	" 11...	2,530	Jno. A. Ayearst..	4.62
" 17...	1,993	"	4.36	" 14...	2,640	Isaac Waldick...	.91
" 26...	2.221	"	1.75	" 14...	2,639	A. Greene........	3.69
" 26...	2.403	"	5.15	" 14...	2,642	J. Ransome......	4.59
" 26...	2,218	Nicholson........	6.72	" 22...	2,827	Matt. C. Beckett .	13.51
" 26...	2,217	"	2.87	" 22...	2,826	" " .	1.15
" 26...	2,216	"	6.72	" 22...	2,828	Gus McManus....	6.06
" 26...	2,215	McGregor........	2.12	" 22...	2,829	J. Johnson.......	22.72
" 26...	2,228	A. Magladdery ..	5.15	" 28...	2,913	J. W. Oakes.....	58.84
" 26...	2,227	Jno. A. Ayearst .	22.44	" 28...	2,914	" "	70.60

FURTHER PROGRESS WITH EXPERIMENTAL WORK IN DISPOSAL OF CHEESE FACTORY WASTE.

The plant of Innerkip, has given continued satisfaction. It has done its work without nuisance. The retention tank on October 19th, after a five months run showed about one quarter of its capacity of sediment and scum. Before starting last spring it was cleaned of last year's remains, the water only having been pumped out from it the previous fall. The sludge and scum were nearly powder this spring from the chemical action and drying of the winter's rest. The dry material was used as a fertilizer, but on account probably of its concentration did not give good results. The material of the previous year was used wet, and, therefore, less concentrated, and besides was put on in the fall, the winter further altering it. The crop result was good. On account of the diminished bulk, and the practical absence of odor in the sludge, the spring would seem to be the best time to remove it. The water though, should be removed before the winter sets in, to avoid the possibility of the tank being damaged by the frost. If the sludge was then diluted, or only thinly scattered on the soil, no harm would be done to the crop, but probably very considerable fertilizing effect produced.

The sub-surface tile after the summer's run, was about one-quarter filled with sludge, much of it very black, some still more or less fresh. The soil about the tile was in excellent condition. If, as promised, the ends of the tile rows be opened and with considerable water from the flush-tank, the sludge flushed out well this fall, they will probably start up next spring as good as new. The winter will probably finish up the cleaning process completely.

This flushing, properly done, ought to make it possible in good soil to obviate any renewal of the tiles in such plants for years.

Several other factories in the district here, put in partial or complete disposal plants after the model of this one. Also several other plants have adopted, as this one has the pasteurizing of the whey before sending it back to the farms, this controlling very effectively the difficulty formerly experienced of bitter cheese outbreaks. Also they have experienced the continued good effects on the animals fed the whey, particularly in the avoidance of diarrhoeal diseases amongst hogs. It would be interesting to know if tuberculosis has been diminished amongst the hogs so fed, as it should be.

For three or four days at a time, fly invasions have occurred this year that have been a real nuisance. Sulphur burning was used once, with practically no effect. Steaming water turned into the empty vats where they were allowed to accumulate, was most effective, but took a long time to get rid of them.

At Colborne, there has been trouble during the latter part of this year. Last year's sludge was not removed from the retention tank, nor were the tiles flushed out, so that on November 2nd, the plant was practically all sludged up. The soil was rather adversely soaked around the tiles. This shows that such plants must be cleaned now and then at least. It is quite possible that if the tank is cleaned and the tiles flushed out, as was indicated to the man in charge of the plant, and the winters given to the rehabilitation of the soil, that all will be right the coming spring. Otherwise this plant is going to be a failure, and it has no right to be, with any care at all.

RABIES.

Since February 1st, of this year, the brains of two hundred and fifteen animals suspected of Rabies have been examined. Of these, sixty-four were found to contain Negri bodies, fifteen showed structures suspiciously like Negri bodies, and one hundred and thirty-four were found to be free of these.

Of the brains examined, 181 were of dogs, 80 positive, 111 negative; 7 were of cats, none positive, 7 negative; 10 were of cattle, 5 positive, 5 negative; 4 were of sheep, 4 positive, none negative; 5 were of horses, 3 positive, 2 negative, and one was of the human being. This one was positive, though the bodies were few in number, and the cells throughout, only slightly degenerate, but one notable fact was observed, viz., that the whole grey matter had a distinctly brownish tinting. This I have learned since, was also noticed in Boston, in human beings dying from this disease.

The method used in these examinations was the one used by the New York Board of Health Laboratory, the smear method and staining by the Fuchsin-picric Acid Methylene Blue method. In some cases the Harris method, using Eosin and Methylene Blue for staining was used. The former served our purpose better, and was generally alone used. We have taken for examination specimens from the grey matter of Ammon's Horn, from the cortical portion, the motor area of the cerebrum and the grey matter of the cerebellum. On the whole, we have found the greater number of positives from the cerebrum, the least from the cerebellum. The difference in favor of the cortex of the cerebrum was not great, perhaps, only a coincidence. From the cerebellum, generally, the number of cells containing the bodies were few and often absent. In some of the cases the brains were diffluent and very unsatisfactory, but in putrid brains not yet diffluent, though the cells were pretty well disintegrated, the bodies of them were still in good enough shape to show fairly typical Negri bodies.

Three types of bodies were found. Large, oval or round ones, clearly defined, generally in the later stages of the disease and generally few in number: small, round bodies very distinct and generally very numerous, and often clumped in the cells; and in the earlier stages of the disease and finally what looked like degenerate one, ragged and irregular in form and granular in the latest stages of the disease. On two occasions were found comparatively large bodies with what appeared to be spores in them, I think they were.

With the exception of the Elk Lake district, no positives were found, outside of the quarantined district. The last positive in Toronto was on February 4th.

The greatest number of positives was found this year in the Huron district, then Middlesex and Elgin, then Hamilton, then Niagara, then Kent, then Oxford, a few in Norfolk and Grey. The latest cases were in Essex and then a slight reappearance in the eastern portion of the Peninsula, probably long incubation period cases.

As we were dealing with cases only that involved human beings, our examinations were confined to the search of Negri bodies only, because of the necessity for early treatment. In only a couple of cases were animal inoculations attempted. This was not generally done, because of the time necessary to obtain results. Last year one of our rabbits took one hundred and eighty days to come down, though the inoculation was done subdurally. Of course, we have always kept in mind the fact that the Negri body is found, probably in not more than eighty or eighty-five per cent. of the cases that might prove to be rabies. This incompleteness is probably due to lack in the technique. The history of the animal was always taken into account in the negative cases, and if they were at all suspicious, advice was given accordingly with reference to treatment.

A great percentage of the positives were confirmed by the history of the animals before their death. Three especially might be mentioned. The first, south-west of Thamesville, a boy was bitten by a strange dog which also bit at the same time a steer on his farm, another dog and a steer on a neighboring farm. The dog was killed, showed Negri bodies. The boy came here for treatment. Three weeks afterwards, on the day he went home the steer on his farm took sick and died in a few days from what seemed Rabies, the brain cells showed Negri bodies, a few days afterwards the other steer took sick and soon died. Its cells showed Negri bodies. The dog bitten took sick and cleared out, as so often happens in such cases, and did not come back. The second case at Niagara-on-the-Lake, a strange dog running wild wandered into a kitchen and without provocation bit the two inmates of the house. It showed very typical Negri bodies. Third, the Elk Lake dog, which showed distinct bodies. On investigation by the Dominion authorities, several rabid dogs were found in the district.

In one case our negative proved to be positive on inoculation by the Dominion authorities. A brain was sent to Ottawa, it not being known at the time that a human being had been bitten, inoculation was made. Before the brain was destroyed it was found that a man had been bitten. A portion of what was left was sent to us for search for Negri bodies. It was sent in glycerine. We did not get a satisfactory smear. We rarely do from glycerine specimens. In this case also, we could not tell what portion of the brain we had. We did not find the bodies and reported it as negative, with explanation. Forty-five days after the inoculation, the injected animals came down with Rabies. The man is now under pasteur treatment.

PASTEUR VACCINATION AGAINST RABIES.

During the first week in March, the so-called Pasteur Treatment was begun in Toronto, and has since been continued, the bulk of work with the patients having devolved on the Laboratory staff.

When the present outbreak became serious it was presumed that many bitten patients would require treatment. Previously they had gone to New York or elsewhere for it. It was decided to give it here. The question arose as to the advisability of establishing a fully equipped laboratory to make the vaccine here, or to go elsewhere for the vaccine, for in New York at the Board of Health Laboratory, Dr. Parke and his assistants had devised a procedure by which the vaccine could be safely packed and shipped to reasonable distances from that city. A Laboratory here for the purpose would have cost considerable, its upkeep considerably more, and it was sincerely hoped that the outbreak would be soon got under control. The New York Laboratory were willing to supply the vaccine, already having to keep their place going continuously, at a very reasonable cost to the Province, considering the care required in its preparation, its careful handling and shipping. It was resolved to accept their offer and await the future.

This vaccine is prepared as follows:—

Every day a group of fresh, healthy rabbits is inoculated subdurally with a seven day fixed virus, so that animals will be coming down each day during the year. The cords of these animals are removed with the most exacting care to avoid any infection in it. These are then dried over caustic potash in closed glass stoppered bottles for varying periods of time, some for one, some for two and so up to fourteen days. The dose for each patient is prepared each day. For the first dose 2 cm. of a fourteen day cord and 2 cm. of a thirteen day cord are rubbed smooth in 6cc of normal salt solution to which 40 per cent. of glycerine has been added. This is then placed in a sterilized rubber stoppered bottle and labelled for its patient and dated with directions as to quantity to be used, viz., whole in two doses of 3cc each to be given at same time.

The second day's dose is made up in the same way as on the first from the same quantity of a twelve and an eleven day cord. The third dose is made from a ten and a nine days cord. The fourth from an eight and a seven day cord. These four doses are the preparatory doses and are dead cords, that is, they would not if injected into an animal produce Rabies. After these four doses the patient is ready for the serious doses.

The fifth day's dose is made from 2cm of a cord, dried only six days and rubbed up with 2½cc of the glycerinated salt solution. This is given in one dose. The sixth day's dose is from a five-day cord, the seventh from a four-day cord, the eighth from a three-day, the ninth from a two-day, the tenth, if the case has been severely bitten or a face case, one-day cord is used. Of course, all of these have their virulence reduced, but all of them are live cords, that is, if the quantity used were injected into unprepared animals they would develop Rabies.

The eleventh day, the five day cord is repeated, on the twelfth, the four day, and so on down to one day, then back to a four day for the sixteenth day, down to a one day again. On the twentieth day, a three day, and in ordinary cases ends on the twenty-third day. In face cases it is continued until the 28th day.

When a case comes for the treatment, a telegram is sent to the Laboratory in New York, and the patient's name entered on their book, and the first dose sent by rapid delivery, reaching here at twelve o'clock noon. The injections are given between 1.30 and 2 p.m. each day. The history of the patient is sent by mail and a description given as to the character of the injury to the patient, where situated, as to whether any treatment had been given locally, as to the length of time from the bite and as to the history of the injuring animal, and as to the presence of Negri bodies in its brain cells. They, in New York, with this data judge as to how long the injections are to be given and also as to any modifications in the order of the days' cords to be used. In the severer cases, cords dried for shorter times are used earlier and more intensely, and for longer periods. Face and nose cases are those requiring the longest treatments.

So far seventy-one patients have been treated. In the greater number of the cases they were bitten or injured by undoubtedly rabic animals. In some abrasions only, and possibly the saliva of rabic animals been rubbed in. In some, the history of the biting animals were suggestive. In two cases the patients had tied the dogs up, but did not want to wait out the ten days, preferring to start. In these two cases the animals were quite well at the end of twelve days, and the treatments discontinued. In one case the dog died rabid.

The greater number of our patients went home after the treatment, in better health than when they came, some even remarkably better. Perhaps the rest, perhaps the ease of mind.

The injections in many cases caused no more local effect than an ordinary hypodermic injection. In some indurations lasting three or four days and extending to a diameter of one to two inches. In no case was there suppuration or enlargement of neighboring glands. in some of the cases the injections caused some slight local subcutaneous hemorrhage.

Generally the first dose made the patient a little sick, as if it were developing a cold. On the second day this had cleared in most cases. On the fifth day again a distinct reaction showed itself, to go off in twenty-four to forty-eight hours. Rarely did any of the subsequent doses produce any general effect. Two of the cases got pretty close to developing delirium tremens. We had to confine them to the upper wards in the hospital to keep them from drowning their sorrow. They both went away in good shape.

So far no development of rabies has taken place in any of them.

All of which is respectfully submitted.

John A. Amyot.

LABORATORY REPORT.

BY JOHN A. AMYOT, M.B.

SUMMARY OF SPECIMENS EXAMINED DURING TWELVE MONTHS ENDING DECEMBER 31ST, 1910.

Months.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
January	16	11	49	99	34	113	21	78	33	1	88	543
February	4	14	33	89	24	107	15	95	118	1	70	570
March	5	13	28	81	60	129	15	88	88	6	57	570
April	2	11	16	67	44	163	14	73	82	19	99	590
May	9	10	14	68	47	163	4	52	53	2	90	512
June	8	7	7	61	46	146	2	54	99	3	107	540
July	17	35	26	123	46	125	10	72	141	1	167	763
August	14	9	24	57	46	98	42	98	86	.....	116	590
September	1	3	24	61	54	97	19	100	95	.....	269	723
October	7	4	41	71	42	111	34	98	52	10	152	622
November	10	16	48	82	37	115	34	77	47	1	117	584
December	6	8	37	62	37	106	4	52	28	3	50	393
	99	141	347	921	517	1,473	214	937	922	47	1,382	7,000
	240		1.268		1,990		1.151		922	1,429		
	1,508											

Report from Laboratory of Provincial Board of Health for Months of January, February, March, 1910.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Algoma—												
January					3	1						4
February			1		1							2
March				1	1	1						3
			1	1	5	2						9
Brant—												
January					1							1
March				1				1	1			3
				1	1			1	1			4
Bruce—												
January	1	1	5	6		1		1				15
February	3	3		4		2						12
March			1		2	1			1			5
	4	4	6	10	2	4		1	1			32
Carleton—												
January					1	1		3		1	25	31
February							2	7			16	25
March									2	1	11	14
					1	1	2	10	2	2	52	70
Dufferin—												
January				1		1						2
February						3						3
March				2					1			3
				3		4			1			8
Durham—												
January	3	1	1	2		3						10
February		2	2	4		1					1	10
March			1	1		2		1	3			8
	3	3	4	7		6		1	3		1	28
Elgin—												
January						1						1
February									1			1
March									2			2
						1			3			4
Essex—												
January		1		1	2	3		1			10	18
February			3	4		5		1				13
March	1	1		2	3	3	1	1				12
	1	2	3	7	5	11	1	3			10	43
Glengarry—												
January					1	1						2
February						1						1
March			1		1							2
			1		2	2						5
Grey—												
January				1	1	3	1	3				9
February				4		4			2			10
March					2	2		2	1			7
				5	3	9	1	5	3			26

Report from Laboratory of Provincial Board of Health for Months of January, February, March, 1910.—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Haldimand—												
January	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	3
February	.....	.....	.....	.....	1	.....	.....	.....	1	.....	4	6
March	.....	.....	.....	.....	2	4	.....	.....	.....	.....	.....	6
	.....	.....	.....	.....	3	7	.....	.....	1	.....	4	15
Halton—												
January	.....	.....	1	4	1	1	.....	1	1	.....	.....	9
February	.....	1	1	.....	.....	3	.....	3	.....	.....	.....	8
March	.....	1	2	1	1	.....	1	.....	1	.....	.....	7
	.....	2	4	5	2	4	1	4	2	.....	.....	24
Hastings—												
January	.....	.....	.....	.....	2	1	.....	.....	.....	.....	.....	3
February	.....	.....	.....	2	1	1	.....	1	.....	.....	.....	5
March	.....	.....	.....	.....	2	3	.....	.....	.....	.....	.....	5
	.....	.....	.....	2	5	5	.....	1	.....	.....	.....	13
Huron—												
January	3	2	1	7	.....	2	.....	.....	.....	.....	.....	15
February	.....	.....	2	5	2	4	.....	.....	1	.....	.....	14
March	.....	2	.....	2	.....	2	.....	.....	4	.....	.....	10
	3	4	3	14	2	8	.....	.....	5	.....	.....	39
Kent—												
January	.....	.....	.....	1	2	1	.....	1	.....	.....	.....	5
February	.....	.....	.....	1	.....	4	2	2	.....	.....	4	13
March	.....	.....	.....	.....	1	4	1	.....	2	.....	.....	8
	.....	.....	.....	2	3	9	3	3	2	.....	4	26
Lambton—												
January	.....	.....	2	4	6	6	.....	.....	.....	.....	.....	18
February	1	.....	2	3	1	4	1	.....	1	.....	2	15
March	1	.....	.....	5	2	5	.....	.....	3	.....	.....	16
	2	.....	4	12	9	15	1	.....	4	.....	2	49
Lanark—												
March	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	2
	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	2
Lincoln—												
January	.....	.....	2	4	6	6	.....	.....	.....	.....	.....	18
February	.....	.....	.....	2	2	.....	.....	.....	2	.....	.....	6
March	.....	.....	.....	.....	.....	2	1	.....	.....	.....	.....	3
	.....	.....	2	6	8	8	1	.....	2	.....	.....	27
Leeds—												
March	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Middlesex—												
January	.....	.....	2	5	.....	3	.....	.....	.....	.....	.....	10
February	.....	.....	.....	1	1	1	.....	1	3	.....	.....	7
March	.....	.....	2	.....	.....	2	.....	.....	5	.....	2	11
	.....	.....	4	6	1	6	.....	1	8	.....	2	28

Report from Laboratory of Provincial Board of Health for Months of January, February, March, 1910.—*Continued.*

Municipalities.	Diphtheritic Swabs. Release. +	Diphtheritic Swabs. Release. −	Diphtheritic Swabs. Diagnosis. +	Diphtheritic Swabs. Diagnosis. −	Tuberculous Sputa. +	Tuberculous Sputa. −	Typhoid Bloods. +	Typhoid Bloods. −	Miscellaneous Specimens.	Waters. Chemical.	Waters. Bacterial.	Total Number for Month.
Muskoka—												
January	.....	.....	.....	1	.....	1	.....	.....	.....	.....	1	3
February	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	2
March	.....	.....	.....	.....	2	2	.....	.....	.....	.....	.....	4
	.....	.....	.....	1	3	4	.....	.....	.....	.....	1	9
Nipissing—												
January	.....	.....	3	.....	1	1	.....	1	.....	.....	1	7
February	.....	.....	3	1	2	1	.....	1	.....	.....	2	10
March	.....	1	2	15	.....	1	.....	.....	.....	.....	1	20
	.....	1	8	16	3	3	.....	2	.....	.....	4	37
Norfolk—												
January	.....	.....	.....	.....	1	1	.....	.....	1	.....	.....	3
March	.....	.....	.....	2	.....	1	1	1	6	.....	.....	11
	.....	.....	.....	2	1	2	1	1	7	.....	.....	14
Northumberland—												
January	.....	.....	.....	2	1	5	1	4	.....	.....	.....	13
February	.....	.....	.....	1	.....	3	.....	.....	.....	.....	.....	4
March	.....	.....	.....	.....	.....	1	1	1	1	.....	.....	4
	.....	.....	.....	3	1	9	2	5	1	.....	.....	21
Ontario—												
January	.....	.....	.....	2	.....	2	.....	.....	1	.....	.....	5
February	.....	.....	.....	1	.....	2	.....	.....	.....	.....	.....	3
March	.....	.....	.....	2	1	2	.....	1	1	.....	.....	7
	.....	.....	.....	5	1	6	.....	1	2	.....	.....	15
Oxford—												
January	.....	.....	.....	1	.....	4	.....	5	.....	.....	.....	10
February	.....	.....	.....	1	.....	7	.....	1	.....	.....	12	21
March	.....	.....	.....	.....	5	19	.....	3	9	.....	.....	36
	.....	.....	.....	2	5	30	.....	9	9	.....	12	67
Parry Sound—												
January	.....	.....	.....	2	.....	4	.....	.....	.....	.....	.....	6
February	.....	.....	.....	4	1	5	.....	.....	.....	.....	.....	10
March	.....	.....	.....	.....	1	2	1	.....	1	.....	.....	5
	.....	.....	.....	6	2	11	1	.....	1	.....	.....	21
Peel—												
January	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	2
February	.....	.....	1	1	.....	.....	.....	.....	1	.....	.....	3
March	.....	.....	.....	4	.....	.....	.....	.....	1	.....	.....	5
	.....	1	1	5	.....	.....	1	.....	2	.....	.....	10
Perth—												
January	.....	.....	.....	.....	.....	.....	.....	2	1	.....	.....	3
February	.....	.....	1	1	.....	1	.....	.....	1	1	.....	5
March	.....	.....	1	2	1	1	1	.....	2	.....	1	9
	.....	.....	2	3	1	2	1	2	4	1	1	17
Peterboro'.—												
January	.....	.....	.....	1	.....	1	1	5	.....	.....	.....	8
February	.....	.....	.....	1	1	2	1	1	2	.....	1	9
March	.....	.....	.....	1	.....	3	.....	.....	.....	.....	.....	4
	.....	.....	.....	3	1	6	2	6	2	.....	1	21

Report from Laboratory of Provincial Board of Health for Months of January, February, March, 1910.—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Prescott—												
February								2				2
March			1									1
			1					2				3
Prince Edward—												
January	3											3
February		6	6	6								18
March		1	3	4								8
	3	7	9	10								29
Rainy River—												
January				1								1
February				1								1
				2								2
Renfrew—												
January					1	1						2
February						2						2
March					1	1						2
					2	4						6
Russell—												
February					2	1						3
March					2	1						3
					4	2						6
Simcoe—												
January	1		3	4	2	8					1	19
February			1	2		4		2			1	10
March		1	1	2	4	16	1	1	1		1	28
	1	1	5	8	6	28	1	3	1		3	57
Stormont—												
January					1							1
February						1						1
					1	1						2
Thunder Bay—												
January						1		1	2		2	6
February								1	11		1	13
March					1	1						2
					1	2		2	13		3	21
Victoria—												
January				3		3		1			18	25
February			1	1		1					1	4
March					2	1		3				6
			1	4	2	5		4			19	35
Waterloo—												
January						2					4	6
February				1		4	2	1			2	10
March				1	2	5	1		2			11
				2	2	11	3	1	2		6	27

Report from Laboratory of Provincial Board of Health for Months of January, February, March, 1910.—*Concluded.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Welland—												
January	.....	.....	4	4	.....	2	1	.....	.....	.....	.....	11
February	.....	1	.....	2	.....	2	.....	1	2	.....	2	10
March	.....	3	.....	5	1	1	.....	4	.....	.....	.....	14
	.....	4	4	11	1	5	1	5	2	.....	2	35
Wellington—												
January	.....	.....	1	3	.....	5	1	2	.....	.....	1	13
February	.....	1	1	2	.....	5	.....	.....	2	.....	.....	11
March	.....	.....	.....	2	4	5	.....	3	3	.....	2	19
	.....	1	2	7	4	15	1	5	5	.....	3	43
Wentworth—												
January	3	.....	4	9	.....	2	.....	2	.....	.....	6	26
February	.....	.....	1	2	.....	.....	.....	4	2	.....	.....	9
March	.....	.....	1	2	.....	.....	1	4	8	.....	6	22
	3	.....	6	13	.....	2	1	10	10	.....	12	57
York—												
January	1	2	17	31	7	38	15	35	27	.....	17	190
February	.....	.....	7	31	8	32	7	66	86	.....	21	258
March	3	3	12	23	16	34	4	62	27	5	33	222
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....
Grand totals..	24	35	107	270	124	355	51	251	240	8	213	1,678

Report from Laboratory of Provincial Board of Health for Month of April, 1910.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Algoma—												
Blind River						1						
Chapleau						1						
Sault Ste. Marie					1	3						
Thessalon					1				3			
					2	5			3			10
Bruce—												
Allenford						1			1			
Cargill				1								
Chesley						1						
Glamis				2								
Ripley					1	1						
Tara		1		1								
White Church						2						
		1		4	1	5			1			12
Carleton—												
Ottawa						2				3	9	
						2				3	9	14
Dufferin—												
Grand Valley						1						
Orangeville						3						
						4						4
Elgin—												
Kingsmill									1			
Rodney									1			
									2			2
Essex—												
Essex						5					2	
Harrow		2									2	
Kingsville				1		2		1				
Walkerville				1								
Windsor				1	1	5						
		2		3	1	12		1			4	23
Grey—												
Annan						2						
Ayton						1					6	
Durham						1						
Dundalk				1								
Hanover						1						
Markdale				1								
Meaford								1				
Rocklyn				1								
Shallow Lake						1						
Owen Sound				1	2	3			1			
				4	2	9		1	1		6	23
Haldimand—												
Caledonia						2					3	
Dunnville					1	1						
Fisherville				1								
Hagersville						1						
Moulton									1			
Selkirk								2				
				1	1	4		2	1		3	12

Report from Laboratory of Provincial Board of Health for Month of April, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Halton—												
Appelby									1			
Georgetown		1				1		2				
Oakville						1						
Milton					1	1						
		1			1	3		2	1			8
Hastings—												
Frankford						1						
Madoc												
Marmora				1	1	4	2				2	
Trenton	1											
	1			1	1	5	2				2	12
Huron—												
Belgrave					1							
Brussels					1							
Ethel						1						
Exeter									1			
Goderich									2			
					2	1			3			6
Kent—												
Blenheim					2	1			1			
Chatham						4	1	1	3		4	
Dresden					1							
Wallaceburg					1							
					4	5	1	1	4		4	19
Lambton—												
Alvinston					1							
Forest											1	
Oil Springs						1						
Petrolia									2			
Watford				1								
Wyoming						1		1				
				1	1	2		1	2		1	8
Lanark—												
Almonte						2						
Pakenham					1							
					1	2						3
Lennox & Addington—												
Napanee									1			
									1			1
Lincoln—												
Port Dalhousie			1									
St. Catharines				1				1				
			1	1				1				3
Middlesex—												
Glencoe											1	
Ilderton									1			
London						2					4	
Lucan						1						

Report from Laboratory of Provincial Board of Health for Month of April, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Middlesex—*Con.*												
Byron											2	
Parkhill								1				
						3		1	1		7	12
Muskoka—												
Bala											1	
Bracebridge				1		1						
Huntsville						5						
Port Carling											7	
				1		6					8	15
Nipissing—												
Cobalt											6	
Englehart		4				1						
Haileybury						1					5	
Mattawa					1							
New Liskeard			3	4								
Sudbury						1						
		4	3	4	1	3					11	26
Norfolk—												
St. Williams						1						
Simcoe									6			
						1			6			7
North'd & Durham—												
Blackstock						2						
Bowmanville		1	1	3					1		1	
Brighton									1			
Cobourg					1						4	
Orono				1								
Pontypool												
Wooler				1								
		1	1	5	1	2			2		5	17
Ontario—												
Oshawa									1			
Saintfield								1				
Whitby					1							
					1			1	1			3
Oxford—												
Brownsville						1						
Embro									1			
Ingersoll						1		1			10	
Innerkip									1			
Lakeside									2			
Mt. Elgin					1							
Otterville						1						
Plattsville						1						
Tillsonburg					1	1						
Woodstock					2	5						
					4	10		1	4		10	29

Report from Laboratory of Provincial Board of Health for Month of April, 1910. —*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	–	+	–	+	–	+	–				
Parry Sound—												
Burk's Falls	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
Parry Sound	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
Powassan	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
Sundridge	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
	.....	.....	.....	2	.....	6	.....	.....	.....	.....	.....	8
Peel—												
Brampton	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Mono Mills	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Mono Rd	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	1	.....	.....	.....	.....	2	.....	.....	3
Perth—												
Listowel	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....
Milverton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Monkton	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
St. Mary's	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....
Sebringville	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Stratford	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	1	1	6	.....	.....	1	.....	1	10
Peterboro'—												
Havelock	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Peterboro'	.....	.....	1	.....	.....	.....	.....	4	.....	.....	5	.....
	.....	.....	1	.....	.....	1	.....	4	.....	.....	5	11
Prescott & Russell—												
Hawkesbury	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
The Brook	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	1	1	.....	1	.....	.....	.....	3
Renfrew—												
Cobden	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Eganville	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....
Renfrew	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
	.....	.....	.....	1	1	2	.....	.....	.....	.....	.....	4
Stormont, Dundas & Glengarry—												
Dunvegan	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Simcoe—												
Angus	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Barrie	.....	.....	.....	.....	1	2	.....	.....	.....	.....	.....	.....
Collingwood	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....
Creemore	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Midland	.....	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....
Orillia	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Penetang	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Stayner	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Thornton	.....	.....	.....	.....	.....	2	.....	.....	1	.....	.....	.....
Tottenham	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	2	.....
Cookstown	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	2	13	.....	3	2	.....	2	22

Report from Laboratory of Provincial Board of Health for Month of April, 1910.
—*Concluded.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Victoria—												
Lindsay								2				
								2				2
Waterloo—												
Berlin						1						
Galt				2		1						
Hespeler	1	2		1	1							
New Hamburg						1						
Preston			1									
Waterloo						1						
	1	2	1	3	1	4						12
Welland—												
Niagara Falls									1		2	
Welland				1	1	1					6	
				1	1	1			1		8	12
Wellington—												
Alma					1	1						
Drayton						1						
Drew Station									1			
Erin				1		1						
Fergus						1					2	
Guelph								1				
Moorefield									2			
Mount Forest					1							
Palmerston				2			1	1				
Rockwood								1				
				3	2	4	1	3	3		2	18
Wentworth—												
Dundas											4	
Hamilton					1			4	1			
Sheffield				2								
				2	1			4	1		4	12
York—												
Aurora						1						
Earlescourt						1						
Locust Hill											1	
Markham					1							
Mimico			6	16								
Pefferlaw											1	
Toronto			3	11	8	35	10	44	39	16	6	
Toronto Junction					1							
Schomberg						1						
Unionville				1								
Weston						1						
West Toronto						1						
			9	28	10	40	10	44	39	16	8	204
Grand totals	2	11	16	67	44	163	14	73	82	19	99	590

Total number of specimens examined in April, 1910, was 590.

Report from Laboratory of Provincial Board of Health for Month of May, 1910.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Algoma—												
Blind River						1						
Sault Ste. Marie						3						
Victoria Mines				1							3	
				1		4					3	8
Brant—												
Brantford									3			
Paris								1				
								1	3			4
Bruce—												
Cargill									1			
Chesley					1	2						
Mildmay									1			
Port Rowan					1							
Ripley				1		1						
Silverton					2			1				
Walkerton						1						
				1	4	4		1	2			12
Carlton—												
Ottawa											9	
											9	9
Dufferin—												
Orangeville				1								
Shelburne				1	1							
				2	1							3
Elgin—												
Springfield						1						
						1						1
Essex—												
Comber								2				
Essex						1			2			
Harrow											8	
Kingsville								1	1			
Leamington						1						
McGregor				1		1						
Windsor						9						
Walkerville		1		1								
		1		2		12		3	3		8	29
Grey—												
Dundalk				1		1						
Heathcote					1							
Maxwell					1	1						
Owen Sound						6						
Thornbury						1						
				1	2	9						12
Haldimand—												
Dunnville						1						
						1						1

Report from Laboratory of Provincial Board of Health for Month of May, 1910. —*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Halton—												
Georgetown					4	2						
Milton					1							
Oakville						2					2	
					5	4					2	11
Haliburton—												
Haliburton					1	1						
					1	1						2
Hastings—												
Frankford				2		1						
Madoc						2						
Marmora								1				
Trenton			1									
			1	2		3		1				7
Huron—												
Fordwich					1							
Goderich									2			
Kintail						1						
Wroxeter						2						
Zurich												
					1	3			2			6
Kent—												
Blenheim					1							
Chatham					3	8		1	1			
Thamesville						1						
Wallaceburg			1	1								
Wheatley						1						
			1	1	4	10		1	1			18
Lambton—												
Arkona									1			
Florence				1								
Sarnia			1			2						
Thedford						2						
Watford											1	
Wyoming						1						
			1	1		5			1		1	9
Lanark—												
Pakenham						1						
						1						1
Lincoln—												
Attercliffe						1						
Jordan						2						
Niagara-on-the-Lake									1			
St. Catharines					1			3			6	
					1	3		3	1		6	14
Middlesex—												
Granton								1	1			
Napier									1			
Parkhill						1						
						1		1	2			4

Report from Laboratory of Provincial Board of Health for Month of May, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Muskoka—												
Bracebridge	....	....	....	....	....	1	1	....	....	....	....	....
Huntsville	....	....	....	....	....	4	....	....	....	....	....	....
Port Carling	....	....	....	....	....	....	....	....	....	....	....	....
Severn Bridge	....	....	....	....	....	1	....	....	....	....	....	....
	....	....	....	....	....	6	1	....	....	....	....	7
Nipissing—												
Cobalt	....	....	....	....	....	....	....	....	....	....	7	....
Englehart	6	1	....	2	....	....	....	....	....	....	....	....
Haileybury	....	....	....	....	....	....	....	....	....	....	1	....
Mattawa	....	....	....	....	1	....	....	....	....	....	....	....
New Liskeard	....	....	....	1	....	....	....	....	....	....	....	....
Sudbury	....	....	....	....	....	2	....	....	....	....	....	....
	6	1	....	3	1	2	....	....	....	....	8	21
Norfolk—												
Delhi	....	....	....	....	....	1	....	....	....	....	....	....
St. Williams	....	....	....	....	....	1	....	....	....	....	1	....
Simcoe	....	....	....	1	....	....	....	....	....	....	6	....
	....	....	....	1	....	2	....	....	....	....	7	10
North. and Durham—												
Brighton	....	....	....	....	1	....	....	....	....	....	....	....
Blackstock	....	....	....	....	....	2	....	....	....	....	....	....
Colborne	....	....	....	....	....	1	....	....	....	....	....	....
Orono	....	....	1	....	....	....	....	....	....	....	....	....
Roseneath	....	....	....	....	....	3	....	....	....	....	....	....
	....	....	1	....	1	6	....	....	....	....	....	8
Ontario—												
Bowmanville	2	4	1	....	1	1	....	....	....	....	....	....
Cannington	....	....	....	....	....	....	....	1	....	....	....	....
Oshawa	....	....	....	....	....	1	....	....	....	....	....	....
Saintfield	....	....	....	....	....	....	....	1	....	....	....	....
Uxbridge	....	....	....	....	....	1	....	....	2	....	....	....
Whitby	....	....	....	....	....	....	....	....	....	....	1	....
	2	4	1	....	1	3	....	2	2	....	1	16
Oxford—												
Embro	....	....	....	....	....	....	....	....	1	....	....	....
Ingersoll	....	....	....	....	1	....	....	....	....	....	....	....
Otterville	....	....	....	....	....	3	....	....	....	....	....	....
Plattsville	....	....	....	....	....	2	....	....	....	....	....	....
Tillsonburg	....	....	....	1	1	....	....	....	....	....	....	....
Woodstock	....	....	....	....	....	9	1	....	....	....	....	....
	....	....	....	1	2	14	1	....	1	....	....	19
Parry Sound—												
Burk's Falls	....	1	1	1	....	....	....	....	....	....	....	....
Commanda	....	....	....	....	....	....	....	....	1	....	....	....
Magnetawan	....	....	....	....	....	1	....	....	....	....	....	....
Powassan	....	....	....	1	....	2	....	....	....	....	....	....
	....	1	1	2	....	3	....	....	1	....	....	8

Report from Laboratory of Provincial Board of Health for Month of May, 1910. —*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Perth—												
Dublin	....	....	....	....	....	....	....	....	....	....	1	....
Listowel	....	....	....	....	....	1	....	....	....	....	....	....
Mitchell	....	....	....	1	....	....	....	1	....	....	....	....
Stratford	1	2	1	5	....	1	....	....	....	....	....	....
	1	2	1	6	....	2	....	1	....	....	1	14
Peel—												
Brampton	....	....	....	1	....	....	....	....	....	....	....	....
Caledon East	....	....	....	....	....	1	....	....	....	....	....	....
Mono Road	....	....	1	1	....	....	....	....	....	....	....	....
Palgrave	....	....	....	....	....	3	....	....	....	....	....	....
Streetsville	....	....	....	....	....	....	1	....	....	....	....	....
	....	....	1	2	....	4	1	....	....	....	....	8
Peterboro'.—												
Peterboro'	....	....	....	....	....	....	....	....	2	....	....	....
	....	....	....	....	....	....	....	....	2	....	....	2
Prescott and Russell												
Vars	....	....	....	....	....	....	....	2	....	....	....	....
	....	....	....	....	....	....	....	2	....	....	....	2
Rainy River—												
Emo	....	....	....	....	....	1	....	....	....	....	....	....
	....	....	....	....	....	1	....	....	....	....	....	1
Renfrew—												
Eganville	....	....	....	....	....	1	....	....	....	....	....	....
Renfrew	....	....	....	....	....	1	....	....	....	....	....	....
	....	....	....	....	....	2	....	....	....	....	....	2
Simcoe—												
Angus	....	....	....	....	....	1	....	....	....	....	....	....
Barrie	....	....	....	....	....	2	....	....	1	....	....	....
Collingwood	....	....	....	....	1	....	....	2	....	....	....	....
Coldwater	....	....	....	....	....	1	....	....	....	....	....	....
Cookstown	....	....	....	....	1	2	....	....	....	....	....	....
Creemore	....	....	....	....	....	....	....	1	....	....	....	....
Elmvale	....	....	....	....	....	1	....	....	....	....	....	....
Midland	....	....	....	....	2	2	....	....	....	....	....	....
Orillia	....	....	....	....	....	1	....	....	....	....	....	....
Singhampton	....	....	....	....	....	1	....	....	....	....	....	....
Shanton	....	....	....	....	....	....	....	....	....	....	2	....
	....	....	....	....	4	11	....	3	1	....	2	21
Stormont, Dundas and Glengarry—												
Osnabruck Centre	....	....	....	....	....	....	....	....	....	2	....	....
	....	....	....	....	....	....	....	....	....	2	....	2
Victoria—												
Kinmount	....	....	....	....	....	2	....	....	....	....	....	....
Oakwood	....	....	....	....	1	....	....	....	....	....	....	....
	....	....	....	....	1	2	....	....	....	....	....	3

Report from Laboratory of Provincial Board of Health for Month of May, 1910. *—Concluded.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Waterloo—												
Ayr											1	
Berlin					1			2				
Galt			1			1						
Hespeler		1		4								
Waterloo					1							
		1	1	4	2	1		2			1	12
Welland—												
Niagara Falls				1				1	1			
Pt. Robinson						1						
Stevensville				1	1	1						
Welland						1						
				2	1	3		1	1			8
Wellington—												
Drayton					1	1					2	
Glen Allan					1							
Guelph								1	2			
Mount Forest						1						
					2	2		1	2		2	9
Wentworth—												
Binbrook				1								
				1								1
York—												
Aurora						1						
Eglinton											1	
Maple									1			
Mimico			3	22		1						
Mount Albert						1						
Markham								1				
Richmond Hill					1	1		2				
Scarboro' Jct.											1	
Schomberg						2						
Toronto			2	12	12	31	1	26	27		37	
Weston				1								
			5	35	13	37	1	29	28		39	187
Grand totals..	9	10	14	68	47	163	4	52	53	2	90	512

Total number of specimens examined in May, 1910, was 512.

Report from Laboratory of Provincial Board of Health for Month of June, 1910.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	−	−				
Algoma—												
Chapleau											5	
Spanish Mills											2	
Victoria Mines				2								
				2							7	9
Brant—												
St. George				1	1	5		1				
				1	1	5		1				8
Bruce—												
Cargill						1						
Kincardine						1						
Tara					1							
Tiverton						1						
Walkerville					1	1						
					2	4						6
Carlton—												
Ottawa									1	1	7	
									1	1	7	9
Dufferin—												
Shelburne								2				
								2				2
Elgin—												
Aylmer				1								
Springfield					1							
				1	1							2
Essex—												
Amherstburg						1						
Belle River				1								
Comber						1						
Kingsville				1	1						8	
Walkerville		2										
Windsor				1	1	5		2				
Essex			1			2		1			1	
		2	1	3	2	9		3			9	29
Grey—												
Durham						1						
Lindenwood											1	
Maxwell					1	1						
Meaford						1					4	
Owen Sound				1		1						
				1	1	4					5	11
Halton—												
Acton				1								
Georgetown						1						
				1	1	1						2
Haldimand—												
Caledonia						1						
Jarvis								1				
						1		1				2

Report from Laboratory of Provincial Board of Health for Month of June, 1910. —*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Haliburton—												
Haliburton					1							
					1							1
Hastings—												
Coe Hill						1						
Eldorado								2				
Frankford					1							
Marmora					1							
Stirling					1	1						
Trenton						1						
					3	3		2				8
Huron—												
Belgrave						1						
Clinton											2	
Ethel				1	1							
Exeter					1							
Fordwich											1	
Goderich						1						
Seaforth								1			1	
Wingham				1								
Zurich								1				
				2	2	2		2			4	12
Kent—												
Chatham						3		2	1			
Duart						1						
Thamesville				1					1			
Wallaceburg				1								
Wheatley						1						
				2		5		2	2			11
Lambton—												
Alvinston						1						
Florence						1						
Inwood				1								
Oil Springs				1								
Petrolia						2						
Watford								1				
				2		4		1				7
Lanark—												
Almonte											12	
											12	12
Lincoln—												
St. Catharines				1					23			
				1					23			24
Lennox & Addington—												
Napanee								1				
								1				1
Muskoka—												
Bracebridge						1						
Huntsville				1	2	1						
Pt. Carling											1	
				1	2	2					1	6

Report from Laboratory of Provincial Board of Health for Month of June, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Middlesex—												
Byron											1	
Granton									1			
London									1			
Lucan								1				
								1	2		1	4
Northum'd & Durham												
Bowmanville			1	1	3	3						
Colborne								1				
Enniskillen						2						
Milbrook											1	
Wooler						1						
			1	1	3	6		1			1	13
Nipissing—												
Cobalt											7	
Cochrane						1						
Haileybury						2						
New Liskeard				1								
North Bay											8	
Sudbury					1	1					2	
				1	1	4					17	23
Norfolk—												
St. Williams						1						
Simcoe					1							
					1	1						2
Ontario—												
Beaverton						1						
Cannington										1		
Newcastle	4	1				1						
Newmarket						1						
Port Perry						1						
Saintfield				1								
Sunderland						1						
Whitby						1			3			
	4	1		1		6			3	1		16
Oxford—												
Beachville								1				
Ingersoll						3		1				
Plattsville						2						
Tavistock					1							
Tillsonburg											6	
Woodstock				1	2	5		2	1		1	
				1	3	10		4	1		7	26
Peel—												
Burnhamthorpe											4	
Caledon								1				
Palgrave						1						
Mono Road						1						
						2		1			4	7
Prescott & Russell —												
Cumberland					1							
Hawkesbury						1						
Vankleek Hill					1							
					2	1						3

Report from Laboratory of Provincial Board of Health for Month of June, 1910. —*Continued.*

Municipalities.	Diphtheritic Swabs. Release. +	Diphtheritic Swabs. Release. −	Diphtheritic Swabs. Diagnosis. +	Diphtheritic Swabs. Diagnosis. −	Tuberculous Sputa. +	Tuberculous Sputa. −	Typhoid Bloods. +	Typhoid Bloods. −	Miscellaneous Specimens.	Waters. Chemical.	Waters. Bacterial.	Total Number for Month.
Parry Sound—												
Burk's Falls	1		1			1		1				
Magnetawan						1						
South River						1						
	1		1			3		1				6
Peterboro'—												
Peterboro'					1	2			11			
					1	2			11			14
Perth—												
Listowel									1			
Millbank									1			
Stratford	1	3		3		1		1				
	1	3		3		1		1	2			11
Prince Edward—												
Picton				1				1				
				1				1				2
Renfrew—												
Pembroke						1						
Petawawa Camp											3	
Renfrew						2		1				
						3		1			3	7
Rainy River—												
Keewatin					1							
					1							1
Stormont, Dundas and Glengarry—												
Dunvegan						1						
						1						1
Simcoe—												
Midland					1	3						
Allandale								1				
Barrie						1		2	1			
Bradford					1							
Collingwood											1	
Cookstown						2						
Elmvale						2						
Orillia					1	1						
Penetang						2						
Phelpston											1	
Thornton											1	
Stroud											1	
					3	11		3	1		4	22
Thunder Bay—												
Fort William											2	
Port Arthur								1				
								1			2	3

Report from Laboratory of Provincial Board of Health for Month of June, 1910. —*Concluded.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Victoria—												
Lindsay								1				
Oakwood											1	
								1			1	2
Waterloo—												
Baden									1			
Berlin						3		2	1		1	
Galt					2	4						
Hespeler	2		1						1			
New Hamburg		1			1	1						
Wellesley					2							
Waterloo									2			
	2	1	1		5	8		2	5		1	25
Welland—												
Humberstone									1			
Niagara Falls							1	2				
Welland				1		1		1				
				1		1	1	3	1			7
Wellington—												
Erin								1	1			
Fergus											1	
Harriston						1			1			
Mount Forest						2						
						3		1	2		1	7
Wentworth—												
Freelton							1					
Hamilton						1						
						1	1					2
York—												
Agincourt						2					1	
Eglinton										1	5	
Markham				1		1						
Mimico			2	19								
Richmond Hill								1				
Schomberg				1								
Toronto				5	11	38		17	45		10	
Unionville											1	
Weston			1	8								
Wychwood				1		1					3	
			3	35	11	42		18	45	1	20	175
	8	7	7	61	47	148	2	55	110	3	107	555

Total number of specimens examined in June, 1910, was 555.

Report from Laboratory of Provincial Board of Health for Month of July, 1910.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Algoma—												
Chelmsford						1						
Espanola											12	
Richard's Landing.					2			1				
Sault Ste. Marie					1						6	
Spragge											3	
Webbwood				1								
				1	3	1		1			21	27
Brant—												
Cainsville											1	
St. George						1						
						1					1	2
Bruce—												
Glammis						1						
Ripley						1						
White Church											2	
						2					2	4
Carleton—												
Ottawa										1	8	
										1	8	9
Dufferin—												
Horning's Mills						1						
Orangeville				2		1						
Shelburne				1								
				3		2						5
Durham—												
Bethany						1						
Bowmanville						2						
Enniskillen.						1						
Newcastle		1										
		1				4						5
Essex—												
Essex			1			2	1					
Kingsville	1		1			2		1				
Walkerville		1										
Windsor						4		2				
	1	1	2			8	1	3				16
Grey—												
Dundalk						1						
Holstein											2	
Kemble											20	
Owen Sound				1		1		5				
Thornbury						2		1				
				1		4		6			22	33
Haldimand—												
Attercliffe Station.							1	1				
Caledonia						2		1				
Dunnville						1						
						3	1	2				6

Report from Laboratory of Provincial Board of Health for Month of July, 1910. —*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Hastings—												
Coe Hill						1						
Eldorado						1						
Madoc								1				
						2		1				3
Huron—												
Crediton									1			
Dashwood						1						
Fordwich				1							1	
Goderich									1			
Holmesville			1	1		1						
Seaforth	1		1	1				1	1		2	
	1		2	3		2		1	3		5	17
Kent—												
Morpeth											6	
Blenheim									1			
Chatham					3	4		3	1			
Thamesville						1						
					3	5		3	2		6	19
Lambton—												
Arkona			1									
Sarnia											2	
Thedford				2								
			1	2							2	5
Lanark—												
Almonte						1						
						1						1
Lincoln—												
Grimsby									1			
Gordon								1	1			
St. Catharines									30			
St. David's									1			
								1	33			34
Middlesex—												
Glencoe				2					1			
Granton							1	1			2	
Mt. Brydges												
Napier				1								
				3			1	1	1		2	8
Muskoka—												
Gravenhurst											2	
Huntsville				1	4	1						
				1	4	1					2	8
Nipissing—												
Gowganda									1			
Haileybury		2										
New Liskeard					3	1						
North Bay				1		1						
Sudbury						1					1	
		2		1	3	3			1		1	11

Report from Laboratory of Provincial Board of Health for Month of July, 1910.
—Continued.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Norfolk—												
Delhi					1			1				
Port Dover								1				
St. Williams						1					1	
Simcoe				1							2	
Waterford						1						
				1	1	2		2			3	9
Northumberland—												
Colborne					1			2				
Roseneath						1					1	
Port Hope									1			
					1	1		2	1		1	6
Ontario—												
Brechin											1	
Oshawa		1										
Sunderland						1						
Uxbridge						1						
		1				2						3
Oxford—												
Beachville						1						
Ingersoll					2	3			1		10	
Lakeside								1				
Norwich						1						
Plattsville						1		2			3	
Princeton						1						
Tillsonburg									1			
Woodstock			1	1	1	4		1			3	
			1	1	3	11		4	2		16	38
Parry Sound—												
Burk's Falls				1								
Byng Inlet						3						
Loring											9	
Parry Sound									1			
Powassan				1								
Sprucedale				1				1				
Sundridge						1						
				3		4		1	1		9	18
Peterboro'—												
Peterboro'						1		1	23			
						1		1	23			25
Peel—												
Brampton											8	
Palgrave					2							
					2						8	10
Perth—												
Burns									1			
Listowel						1						
Milverton						2						
St. Mary's									1			
Stratford						2						
						5			2			7

Report from Laboratory of Provincial Board of Health for Month of July, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Prescott and Russell												
Hawkesbury								1				
The Brook						1						
Vars								1				
						1		2				3
Prince Edward—												
Bloomfield						1						
						1						1
Rainy River—												
Fort Frances			1			1						
Keewatin											6	
			1			1					6	8
Renfrew—												
Petewawa Camp				2								
Renfrew						1						
				2		1						3
Simcoe—												
Allandale							2	1				
Alliston						1						
Barrie								1				
Bradford	7	2	2									
Collingwood											1	
Cookstown					2							
Elmvale						2						
Penetang								1				
Phelpston						1						
Strand					2							
Singhampton						1						
Churchill						1						
	7	2	2		4	6	2	3			1	27
Thunder Bay—												
Fort William						1						
Port Arthur											1	
						1					1	2
Victoria—												
Bobcaygeon						1						
Lindsay						2		1			3	
Manilla								1				
Omemee						1						
						4		2			3	9
Waterloo—												
Ayr			1			1		1				
Berlin					2	1						
Hespeler	7	25	1	1								
Galt			1		1	3		2	1			
Linwood											1	
New Hamburg						1		1				
Waterloo									1			
	7	25	3	1	3	6		4	2		2	53

Report from Laboratory of Provincial Board of Health for Month of July, 1910. —*Concluded.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Welland—												
Niagara Falls	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Welland	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
Ridgeway	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....
	.....	.....	.....	.....	.....	1	.....	2	.....	.....	2	5
Wellington—												
Drayton	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....
Erin	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Guelph	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Harriston	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hillsburg	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Rockwood	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
	.....	.....	1	1	1	.....	1	2	1	.....	.....	7
Wentworth—												
Dundas	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Freelton	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Hamilton	.....	.....	3	26	.....	.....	.....	3	1	.....	.....	.....
	.....	.....	3	26	.....	1	.....	3	2	.....	.....	35
York—												
Eglinton	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	33	.....
Lambton Mills	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Markham	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....
Mimico	.....	.....	2	13	.....	.....	.....	.....	.....	.....	.....	.....
Pefferlaw	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Richmond Hill	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Schomberg	1	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Toronto	.....	2	8	59	17	31	4	24	66	.....	9	.....
Unionville	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Weston	.....	.....	.....	.....	.....	1	.....	2	.....	.....	.....	.....
	1	3	10	73	18	37	4	26	66	.....	43	281
Grand total...	17	35	26	123	46	125	10	72	141	1	167	763

Total number of specimens examined in July, 1910, was 763.

Report from Laboratory of Provincial Board of Health for Month of August, 1910.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	−	−				
Algoma—												
Blind River											2	
Chelmsford						2						
Cutler											2	
Espanola					1							
Massey											1	
Thessalon								1				
Sudbury						4					2	
Webbwood				1								
				1	1	6		1			7	16
Bruce—												
Allenford						1						
Chesley					1	1						
Lucknow							5					
Paisley							1	1			1	
Port Elgin						1			1			
Tara						1						
White Church									1		3	
					1	4	6	1	2		4	18
Carleton—												
Ottawa					2	3	1	2	1			
					2	3	1	2	1			9
Durham—												
Bowmanville											1	
Millbrook											1	
Orono											1	
											3	3
Dufferin—												
Grand Valley						1						
Orangeville						2						
						3						3
Elgin—												
Port Stanley						1						
Shedden					1							
					1	1						2
Essex—												
Essex					1	2						
Kingsville			1	2	1			1				
Windsor					3	1						
			1	2	5	3		1				12
Glengarry—												
Alexandria									1			
									1			1
Grey—												
Markdale								1				
Meaford						1	1	2				
Owen Sound											2	
Priceville									1			
						1	1	3	1		2	8

Report from Laboratory of Provincial Board of Health for Month of August, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	–	+	–	+	–	+	–				
Haldimand—												
Cayuga						2						
Dunnville									1			
Jarvis						1		1				
						3		1	1			5
Haliburton—												
Haliburton						1						
						1						1
Halton—												
Georgetown					1							
					1							1
Hastings—												
Belleville											2	
Coe Hill						1						
Madoc					1							
Marmora						1		1				
					1	2		1			2	6
Huron—												
Dashwood					1							
Ethel						1						
Exeter						1						
Goderich									2			
Seaforth				1				1				
Wingham					1				1		2	
				1	2	2		1	3		2	11
Kent—												
Blenheim								1				
Bothwell		4	1									
Chatham						2		1				
Fargo									1			
Thamesville						1						
Valetta									1			
		4	1			3		2	2			12
Lambton—												
Alvinston						1			1			
Thedford												
Wyoming						1	1	2				
						2	1	2	1			6
Lanark—												
Almonte											1	
Pakenham						1						
						1					1	2
Lennox & Addington—												
Barrett						1						
						1						1
Lincoln—												
St. Catharines			2	2								
Port Dalhousie				1								
St. Anne's									1			
Jordon					1							
			2	3	1				1			7

Report from Laboratory of Provincial Board of Health for Month of August, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	−	−				
Middlesex—												
Adelaide						1						
Glencoe				1		3						
Granton											2	
Lobo											1	
London											1	
				1		4					4	9
Muskoka—												
Bracebridge			3	5								
Huntsville						1						
Severn Bridge					1							
			3	5	1	1						10
Nipissing—												
Cobalt											6	
Haileybury											1	
New Liskeard				1	3							
North Bay					1	1						
Whitney											2	
Sellwood											2	
				1	4	1					11	17
Norfolk—												
Delhi						1						
St. Williams											1	
Simcoe								1				
Pt. Rowan				1								
				1		1		1			1	4
Ontario—												
Beaverton				1			1	1				
Oshawa						2						
Pt. Perry					2						1	
Sunderland					1							
Saintfield								1				
				1	3	2	1	2			1	11
Oxford—												
Innerkip									1			
Ingersoll					2	4		2				
Holbroke									1			
Lakeside									1			
Norwich						1						
Plattsville						1		3			1	
Tavistock						1						
Thamesford											7	
Woodstock				1	1	3	1	5				
				1	3	10	1	10	3		8	36
Parry Sound—												
Byng Inlet								1				
Powassan								1				
Parry Sound					1							
South River								1				
Callender					1							
					2			3				5

Report from Laboratory of Provincial Board of Health for Month of August, 1910. —*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Peterboro'—												
Lakefield							1					
Peterboro'					1	1		1	18			
					1	2	1	1	18			23
Peel—												
Brampton											1	
Streetsville									1			
									1		1	2
Perth—												
Dublin											1	
Kirkton								2				
Monkton						1	1					
Stratford		1	2		1	1	1	3	1			
		1	2		1	2	2	5	1		1	15
Prince Edward—												
Picton	1	1	1									
	1	1	1									3
Prescott—												
Hawkesbury								1				
Vankleek Hill					1							
					1			1				2
Rainy River—												
Fort Frances				2								
				2								2
Renfrew—												
Renfrew									1			
									1			1
Russell—												
Vars								1				
								1				1
Simcoe—												
Alliston								1			3	
Barrie				2		1	1	2			6	
Beeton									1			
Bradford	3	1	1	1								
Coldwater							2	1				
Cookstown					2							
Creemore							1	1				
Elmvale						2						
Penetang						1					1	
Stayner								1				
Stroud					1							
	3	1	1	3	3	4	4	6	1		10	36
Thunder Bay—												
Pt. Arthur								1				
								1				1

Report from Laboratory of Provincial Board of Health for Month of August, 1910.
—*Concluded.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Victoria—												
Bobcaygeon	....	....	....	....	1	....	....	....	....	....	....	....
Kinmount	....	....	....	....	....	1	....	....	....	....	....	....
Lindsay	....	....	....	....	....	1	....	....	....	....	2	....
Oakwood	....	....	....	....	....	....	....	1	....	....	....	....
Manilla	....	....	....	....	....	....	....	....	....	....	4	....
Woodville	....	....	1	....	....	....	....	....	....	....	....	....
	....	....	1	....	1	2	....	1	....	....	6	11
Waterloo—												
Baden	....	....	....	....	....	....	....	1	....	....	....	....
Berlin	....	....	....	....	....	1	3	....	....	....	....	....
Galt	....	....	....	1	2	3	....	....	....	....	....	....
New Hamburg	....	....	....	....	....	....	....	3	....	....	....	....
	....	....	....	1	2	4	3	4	....	....	....	14
Welland—												
Fenwick	....	....	....	....	....	....	....	1	....	....	....	....
Niagara Falls	....	....	....	....	....	1	....	....	....	....	....	....
Ridgeway	....	....	....	....	....	....	....	....	....	....	1	....
	....	....	....	....	....	1	....	1	....	....	1	3
Wellington—												
Arthur	....	....	....	....	....	....	....	....	1	....	5	....
Conn	....	....	....	....	....	1	....	....	....	....	....	....
Clifford	....	....	....	....	....	....	....	....	1	....	....	....
Erin	....	....	....	....	1	....	....	....	....	....	....	....
Harriston	....	....	....	....	....	1	....	....	....	....	....	....
Guelph	2	1	....	1	....	....	....	1	....	....	....	....
Mt. Forest	....	....	....	....	....	2	....	....	....	....	....	....
	2	1	....	1	1	4	....	1	2	....	5	17
Wentworth—												
Freelton	2	....	....	....	....	....	....	....	....	....	....	....
Hamilton	4	....	4	2	....	....	....	....	2	....	....	....
Jerseyville	....	....	....	....	....	....	....	....	....	....	1	....
	6	....	4	2	....	....	....	....	2	....	1	15
York—												
Aurora	....	....	....	....	1	....	....	....	....	....	....	....
Eglinton	....	....	....	....	1	1	....	....	....	....	16	....
Roche's Pt	....	....	....	....	....	....	....	....	....	....	1	....
Mimico	....	....	3	24	....	....	2	....	....	....	....	....
Newmarket	....	....	....	....	....	....	....	....	....	....	1	....
Schomberg	....	....	....	....	....	....	....	....	1	....	....	....
Sutton West	1	....	....	....	....	....	....	....	....	....	....	....
Toronto	1	1	5	7	6	22	10	45	43	....	17	....
Unionville	....	....	....	....	....	....	....	....	....	....	1	....
Weston	....	....	....	....	....	2	....	....	....	....	7	....
Woodbridge	....	....	....	....	....	....	....	....	....	....	2	....
	2	1	8	31	8	25	12	45	44	....	45	230
Grand Totals	14	9	24	57	46	98	42	98	86	....	116	590

Total number of specimens examined during August was 590.

Report from Laboratory of Provincial Board of Health for Month of September, 1910.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Algoma—												
Chapleau						1						
Cutler											3	
Massey Station				1								
Spanish Mills											2	
Thessalon								1				
Webbwood					1			1			6	
Victoria Mines			1								2	
			1	1	1	1		2			13	19
Brant—												
Brantford											5	
											5	5
Bruce—												
Chesley								1				
Kincardine											7	
Paisley									1			
Walkerton								1				
White Church				1								
Tara				1								
				2				2	1		7	12
Carleton—												
Ottawa						2	1	1			9	
						2	1	1			9	13
Dufferin—												
Shelburne						1						
						1						1
Durham—												
Bethany						2			2			
Bowmanville											1	
Enniskillen											1	
Orono			1									
Pontypool					1							
Port Hope			1									
			2		1	2			2		2	9
Dundas—												
Winchester				1								
				1								1
Elgin—												
Dutton											1	
											1	1
Essex—												
Essex				2		2						
Kingsville	1		1	2	1		1					
Leamington						1						
Walkerville		1										
Windsor				1	1	3		1				
	1	1	1	5	2	6	1	1				18
Glengarry—												
Maxville								1				
								1				1

Report from Laboratory of Provincial Board of Health for Month of September, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	–	+	–	+	–	–	–				
Grey—												
Dundalk				1							1	
Hanover									1			
Markdale							1	2			2	
Owen Sound							1	2				
				1			2	4	1		3	11
Halton—												
Campbellville											1	
Esquesing											2	
Georgetown			2									
Oakville						2						
Trafalgar									1			
			2			2			1		3	8
Haldimand—												
Cayuga						1						
Dunnville						1						
						2						2
Hastings—												
Belleville					1						3	
Madoc								1				
Marmora				1		1		1				
Stirling					2							
				1	3	1		2			3	10
Huron—												
Auburn					1							
Grand Bend									1			
Wingham											2	
					1				1		2	4
Kent—												
Blenheim						1						
Chatham					1	4		3				
Dresden						1						
Thamesville				1								
				1	1	6		3				11
Lambton—												
Alvinston			1	3								
Camlachie						1					2	
Forest						1						
Inwood				1								
Petrolia						2						
Sarnia						1						
Thedford								1			1	
Wyoming								2				
			1	4		5		3			3	16
Lanark—												
Almonte											3	
Pakenham						1						
						1					3	4

Report from Laboratory of Provincial Board of Health for Month of September, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Lincoln—												
Beamsville					1			2				
Grimsby											4	
St. Catharines								1				
					1			3			4	8
Middlesex—												
Lobo											1	
Park Hill								2				
								2			1	3
Muskoka—												
Bala				1							1	
Bracebridge				1		1		1				
Huntsville					1	1			1			
Severn Bridge						1						
				2	1	3		1	1		1	9
Nipissing—												
Cobalt											9	
Cochrane				1								
Elk Lake									1			
Haileybury						3					5	
Sudbury					1	1					1	
Whitney											10	
North Bay								2				
				1	1	4		2	1		25	34
Norfolk—												
Delhi						1						
Simcoe			1	1							1	
			1	1		1					1	4
Northumberland—												
Cobourg							1	1				
Colborne				1		1						
Campbellford								1				
				1		1	1	2				5
Ontario—												
Cannington						1						
Pickering							1					
Pine Dale											1	
Port Perry					1						3	
Oshawa						1					3	
Saintfield								1				
Sunderland					2	1						
					3	3	1	1			7	15
Oxford—												
Beaconsfield											1	
Ingersoll					1	2		3			4	
Otterville					1							
Plattsville						1					3	
Princeton				1		1						
Salford									1			
Tavistock						2						
Woodstock				1		1		4				
				2	2	7		7	1		8	27

Report from Laboratory of Provincial Board of Health for Month of September, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Parry Sound—												
Burk's Falls	....	....	....	2	....	....	....	....	....	....	....	....
Byng Inlet	....	....	....	....	....	....	1	1	....	....	5	....
Callender	....	....	....	....	....	....	....	....	1	....	....	....
James Bay Jct.	....	....	....	....	....	....	....	....	....	....	1	....
Magnetawan	....	....	....	....	1	....	....	....	....	....	....	....
Powassan	....	....	....	....	....	....	....	1	....	....	....	....
South River	....	....	....	....	....	....	....	....	....	....	1	....
Sundridge	....	....	....	....	....	2	....	....	....	....	....	....
	....	....	....	2	1	2	1	2	1	....	7	16
Peel—												
Bolton	....	....	....	....	....	....	....	....	1	....	....	....
Brampton	....	....	....	....	....	....	1	2	....	....	....	....
Caledon E.	....	....	....	....	1	....	....	1	....	....	....	....
Claude	....	....	....	2	....	....	....	....	1	....	....	....
	....	....	....	2	1	....	1	3	2	....	....	9
Perth—												
Listowel	....	....	....	....	....	2	....	1	....	....	3	....
Monkton	....	....	1	1	....	1	....	1	....	....	....	....
Mono Road	....	....	....	....	....	....	....	....	....	....	1	....
St. Mary's	....	....	....	....	....	1	....	....	....	....	....	....
Sebringville	....	....	....	....	....	....	....	....	1	....	....	....
Stratford	....	....	....	1	1	....	....	....	....	....	....	....
	....	....	1	2	1	4	....	2	1	....	4	15
Peterboro'—												
Havelock	....	....	1	....	1	....	....	....	....	....	5	....
Lakefield	....	....	....	....	....	....	....	2	....	....	....	....
Peterboro'	....	....	....	....	1	....	....	....	12	....	2	....
	....	....	1	....	2	....	....	2	12	....	7	24
Prescott—												
Hawkesbury	....	....	....	....	....	....	....	1	....	....	....	....
	....	....	....	....	....	....	....	1	....	....	....	1
Prince Edward—												
Picton	....	1	....	....	....	....	....	....	....	....	....	....
Wellington	....	....	....	....	....	....	....	....	1	....	....	....
	....	1	....	....	....	....	....	....	1	....	....	2
Rainy River—												
Keewatin	....	....	....	....	....	1	....	....	....	....	....	....
	....	....	....	....	....	1	....	....	....	....	....	1
Renfrew—												
Pembroke	....	....	....	....	....	....	....	....	....	....	6	....
Renfrew	....	....	....	....	....	1	....	....	....	....	....	....
	....	....	....	....	....	1	....	....	....	....	6	7
Russell—												
The Brook	....	....	....	....	....	2	....	....	....	....	....	....
	....	....	....	....	....	2	....	....	....	....	....	2

Report from Laboratory of Provincial Board of Health for Month of September, 1910.—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	-	+	-	+	-	+	-				
Simcoe—												
Barrie			1			1	1				6	
Churchill					1							
Collingwood									12			
Cookstown					1							
Creemore								2				
Midland					2	1						
Orillia											4	
Tottenham								1				
			1		4	2	1	3	12		10	33
Thunder Bay—												
Fort William											4	
											4	4
Victoria—												
Ancona Pt.											11	
Fenelon Falls					1						1	
Lindsay						1					1	
Oakwood						1						
Woodville											1	
					1	2					14	17
Waterlo—												
Ayr					2		1				1	
Berlin					1	1					1	
Galt					1	1					4	
New Dundee			1									
New Hamburg					1	1		2				
Waterloo			1	3								
			2	3	5	3	1	2			6	22
Welland—												
Fenwick					1			1				
Port Robinson								1				
Ridgeway											1	
Welland						1		1				
					1	1		3			1	6
Wellington—												
Arthur									1			
Drayton											2	
Elora					1							
Fergus					1							
Guelph		1				1	2	3				
Hillsburg											5	
Moorefield									1			
Morrison			2					3				
Rockwood											1	
		1	2		2	1	2	6	2		8	24
Wentworth—												
Binbrook				1								
Freelton											1	
Hamilton									1			
Waterdown											4	
				1					1		5	7

Report from Laboratory of Provincial Board of Health for Month of September, 1910.
—Concluded.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
York—												
Lambton Mills											4	
Eglinton								1			10	
Mimico			5	20		1	1	2			8	
Pefferlaw						1					1	
Schomberg					1							
Sutton West				1								
Queensville											1	
Richmond Hill								1				
Toronto			4	7	17	27	5	35	54		73	
Weston					1	1	1					
			9	28	19	30	7	39	54		97	283
Grand Totals	1	3	24	61	54	97	19	100	95		270	724

Total number of specimens examined in September was 724.

Report from Laboratory of Provincial Board of Health for Month of October, 1910.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Algoma—												
Sault Ste. Marie										1		
Thessalon							2					
Victoria Mines			1									
Webbwood								1				
			1				2	1		1		5
Brant—												
Brantford										2		
										2		2
Bruce—												
Creemore								5				
Kincardine								1				
Paisley			1									
Tiverton								1				
Walkerton							1					
			1				1	7				9
Carleton—												
Kars								1				
Ottawa						7	1	1			6	
						7	1	2			6	16
Dufferin—												
Horning's Mills				1								
Shelburne						1						
				1		1						2
Elgin—												
St. Thomas										1		
										1		1
Essex—												
Comber												
Essex					1	1		1				
Kingsville			3	3				1				
Leamington					1							
Maidstone											1	
Windsor					1	5		1				
			3	3	3	6		3			1	19
Grey—												
Markdale						1		3				
Maxwell						1						
Owen Sound						1	1					
Rocklyn											1	
Durham									1			
						3	1	3	1		1	9
Haldimand—												
Cayuga						1						
						1						1

Report from Laboratory of Provincial Board of Health for Month of October, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Halton—												
Burlington											3	
Georgetown					1							
					1						3	4
Hastings—												
Belleville					1				1		1	
Madoc							1	3				
Trenton											5	
					1		1	3	1		6	12
Huron—												
Brussels									1			
Crediton											1	
Dashwood					1							
Ethel						1						
					1	1			1		1	4
Kent—												
Blenheim						1		1				
Chatham					1	1	3	5				
Merlin						1						
Ridgetown									1			
Thamesville				1		1						
Wheatley											1	
				1	1	4	3	6	1		1	17
Lambton—												
Brigden						1						
Camlachie						1						
Forest											1	
Inwood								1				
Wyoming						2		2			6	
						4		3			7	14
Lanark—												
Almonte											2	
Carleton Place											2	
											4	4
Lincoln—												
Beamsville					1							
St. Catharines			1	1	3	2						
			1	1	4	2						8
Middlesex—												
Ailsa Craig											1	
Granton								1				
London									1			
								1	1		1	3
Muskoka—												
Bracebridge				1								
Gravenhurst										1		
Huntsville				1		2						
				2		2				1		5

Report from Laboratory of Provincial Board of Health for Month of October, 1910.
—Continued.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Nipissing—												
Cobalt										1		
Cochrane											1	
Copper Cliff								1				
Diver											1	
Haileybury					1							
Sudbury					1	1						
Whitney											8	
					2	1		1		1	10	15
Norfolk—												
Delhi						2					1	
Pt. Dover						1	1					
St. Williams											2	
Simcoe				1		2	1	1			7	
				1		5	2	1			10	19
North. and Durham—												
Bowmanville							4				1	
Brighton											1	
Clarke									1			
Cobourg				1		2		1		1	3	
Colbourne					1			1				
Enniskillen						1					2	
Newcastle							1					
Orono											19	
Port Hope				1								
				2	1	3	5	2	1	1	26	41
Ontario—												
Beaverton					1							
Pickering												
Port Perry												
Whitby					1							
					2							2
Oxford—												
Bright											1	
Tillsonburg				1		1		2				
Woodstock						2		4				
				1		3		6			1	11
Parry Sound—												
Burk's Falls				5								
Byng Inlet								2				
Kearney											3	
Loring								1				
Parry Sound						4						
Powassan				1				2				
Rosseau						1						
Sprucedale			1			1						
			1	6		6		5			3	21

Report from Laboratory of Provincial Board of Health for Month of October, 1910.
—Continued.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Peel—												
Caledon E.				1								
Brampton								1				
Mona Rd.	2		2									
	2		2	1				1				6
Perth—												
Kirkton								1			1	
Listowel						1						
Stratford				1		2						
				1		3		1			1	6
Peterboro'—												
Havelock		1	1		1	2						
Peterboro'	3	1	8	1	1	2			15	1		
	3	2	9	1	2	4			15	1		37
Rainy River—												
Fort Frances				1								
Rainy River											1	
				1							1	2
Renfrew—												
Cobden											9	
											9	9
Simcoe—												
Alliston								1				
Barrie					2			3		1	8	
Collingwood										1		
Cookstown					1							
Jarratt								2				
Midland						3		1				
Orillia									1			
Penetang						2		1				
Springfield						1						
Strand					3							
Thornton											1	
					6	6		8	1	2	9	32
Stormont, Dundas & Glengarry—												
Maxville								1			1	
								1			1	2
Thunder Bay—												
Port Arthur			1	1							6	
			1	1							6	8
Victoria—												
Bobcaygeon				1								
Coboconk						1						
Fenelon Falls											1	
Manilla							1	1				
				1		1	1	1			1	5

Report from Laboratory of Provincial Board of Health for Month of October, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Waterloo—												
Berlin						1					8	
Galt						2						
Hawkesville						1		1				
Hespeler						1						
Linwood											3	
New Hamburg						1						
Preston			1			1						
Wellesley								1				
			1			7		2			11	21
Welland—												
Niagara Falls						1					2	
Ridgeway											3	
Welland							3				4	
						1	3				9	13
Wellington—												
Drayton						1						
Mt. Forest						2						
Palmerston				1								
Glen Allan											1	
				1		3					1	5
Wentworth—												
Dundas									1			
Glanford									1			
Sheffield								2				
								2	2			4
York—												
Agincourt								1				
Aurora					1							
Eglinton											10	
Lambton Mills											1	
Mimico		2	15	30	2			1				
Newmarket								1	1			
Schomberg				1								
Toronto	2		6	13	15	36	14	35	27		9	
Virginia											1	
Weston				2		1					1	
	2	2	21	46	18	37	14	38	28		22	228
Grand Totals	7	4	41	71	42	111	34	98	52	10	152	622

NOTE.—Total number of specimens examined in October was 622.

Report from Laboratory of Provincial Board of Health for Month of November, 1910.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Algoma—												
Chelmsford						1						
Cutler				1								
Massey Station			1									
Sault Ste, Marie					1	1						
			1	1	1	2						5
Brant—												
Paris											1	
											1	1
Bruce—												
Chesley						1						
Lucknow								3				
Pt. Elgin						2						
Walkerton									1		1	
White Church						1						
						4		3	1		1	9
Carleton—												
Ottawa						1				1	5	
						1				1	5	7
Dufferin—												
Horning's Mills							2	2				
Shelburne						1						
						1	2	2				5
Essex—												
Essex					1							
Kingsville				1				1				
Maidstone											1	
Walkerville	1										3	
Windsor						2		1				
	1			1	1	2		2			4	11
Grey—												
Dundalk						2						
Maxwell								1				
Meaford						1					4	
Owen Sound				1		1	1					
Rocklyn		1										
Shallow Lake						2						
		1		1		6	1	1			4	14
Haldimand—												
Attercliffe Station					1							
Cayuga						1						
Dunnville								1				
Caledonia					1							
Jarvis							1					
Selkirk						1						
					2	2	1	1				6
Haliburton—												
Haliburton						1						
						1						1

Report from Laboratory of Provincial Board of Health for Month of November, 1910. —*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Halton—												
Acton							1				10	
Burlington											2	
Georgetown				1		1			1			
Milton											1	
Nassagaweya								1				
Oakville											1	
				1		1	1	1	1		14	19
Hastings—												
Belleville					1							
Eldorado							1					
Marmora					2	4	1					
Trenton						1					7	
Tweed											4	
					3	5	2				11	21
Huron—												
Brussels								1				
Dashwood						1						
Ethel							1	1				
Goderich				1								
Seaforth							1					
Wingham											1	
				1		1	2	2			1	7
Kent—												
Chatham					4	3	1	4				
					4	3	1	4				12
Lambton—												
Alvinston					1							
Oil Springs					1							
Petrolea											1	
Thedford						1						
Wyoming							1					
					2	1	1				1	5
Lanark—												
Almonte											3	
											1	1
Lincoln—												
Beamsville							1					
St. Catharines			1			3	1				9	
Smithville									1			
			1			3	2		1		9	16
Middlesex—												
Crumlin									1			
Glencoe											1	
									1		1	2
Muskoka—												
Bracebridge				1	1		1	1				
Huntsville							1					
Port Carling			1									
			1	1	1		2	1				6

Report from Laboratory of Provincial Board of Health for Month of November, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+		+	−	+	−	+	−				
Nipissing—												
Cobalt									1			
Copper Cliff							1					
Haileybury						2					1	
New Liskeard						1						
North Bay						1						
Sudbury					1						4	
					1	4	1		1		5	12
Norfolk—												
Delhi						1						
Perth											1	
Port Dover					1							
Simcoe					1			1				
					2	1		1			1	5
Ontario—												
Oshawa						1						
Port Perry						1		1				
Saintfield							1					
Sunderland					1							
					1	2	1	1				5
Northumberland and Durham—												
Bowmanville				1		1						
Campbellford						1						
Cobourg						1	1	1				
Colborne					1							
Brighton					1			1				
Orono			1	6		1						
Port Hope											2	
			1	7	2	4	1	2			2	19
Oxford—												
Bright											1	
Ingersoll						1			1			
Plattsville							2	1			4	
Tavistock											1	
Tillsonburg							1	1				
Uxbridge						1						
Woodstock				1	1	3	2	4	1			
				1	1	5	5	6	2		6	26
Parry Sound—												
Burk's Falls				2								
South River												
Parry Sound						1					1	
Sprucedale		1				1						
		1		2		2					1	6
Perth—												
Listowel				2		1						
St. Mary's	1	3	1						1			
Stratford				1								
	1	3	1	3		1			1			10

Report from Laboratory of Provincial Board of Health for Month of November, 1910. —*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Peel—												
Alton	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	....
Brampton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	....
Mono Road	.....	2	.....	2	.....	.....	.....	.....	.....	.....	.....	....
Port Credit	.....	.....	.....	.....	.....	.....	2	1	.....	.....	.....	....
	.....	2	.....	2	.....	.....	2	2	.....	.....	3	11
Peterboro'.—												
Havelock	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	....
Peterboro'	.....	2	2	2	.....	4	1	3	.....	.....	.....	....
	.....	2	3	2	.....	4	1	3	.....	.....	.....	15
Prince Edward—												
Picton	1	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	....
	1	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	3
Rainy River—												
Fort Frances	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	....
Kenora	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	....
	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	2
Renfrew—												
Cobden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	
Renfrew	.....	.....	.....	1	.....	2	.....	.....	.....	.....	.....	
	.....	.....	.....	1	.....	2	.....	.....	.....	.....	6	9
Simcoe—												
Barrie	.....	.....	.....	1	1	1	.....	.....	.....	.....	.....	....
Cookstown	.....	.....	1	2	.....	.....	.....	.....	.....	.....	.....	....
Midland	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	....
Penetang	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	....
Phelpston	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	....
Thornton	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	3	....
	.....	.....	4	3	1	4	.....	.....	.....	.....	3	15
Stormont, Dundas and Glengarry—												
Maxville	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	....
	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Thunder Bay—												
Fort William	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	....
Port Arthur	.....	.....	.....	.....	.....	.....	1	2	.....	.....	4	....
	.....	.....	.....	.....	.....	.....	1	2	.....	.....	5	8
Victoria—												
Bobcaygeon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	....
Coboconk	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	....
Fenelon Falls	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	....
Little Britain	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	....
	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	3	4
Waterloo—												
Ayr	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	....
Berlin	3	4	8	3	2	.....	.....	1	.....	.....	.....	....
Galt	.....	.....	1	.....	.....	1	.....	.....	.....	.....	1	....
Hespeler	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	....
	3	4	9	3	2	3	.....	1	.....	.....	2	2

Report from Laboratory of Provincial Board of Health for Month of November, 1910.
—Concluded.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Welland—												
Fonthill						1						
Niagara Falls								1				
Welland						1		4				
						2		5				7
Wellington—												
Alma						1						
Drayton						2						
Elora						1					4	
Erin					1							
Glen Allan											3	
Guelph	2		1	1	1			1				
Hillsburg											9	
Morriston				1								
Mount Forest						1						
	2		1	2	2	5		1			16	29
Wentworth—												
Hamilton				2		1					1	
Sheffield				1		1						
				3		2					1	6
York—												
Agincourt							1					
Amber											1	
Eglinton				2								
Lambton Mills						1						
Mount Albert				1								
Schomberg						2						
Swansea				2			1	1				
Mimico			8	25								
Toronto	2	3	16	15	10	36	4	35	38		5	
Weston			2			1	1					
	2	3	26	45	10	40	7	36	38		6	213
Grand totals	10	16	48	82	37	115	34	77	47	1	117	584

NOTE.—Total number of specimens examined in November, 584.

Report from Laboratory of Provincial Board of Health for Month of December, 1910.

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Algoma—												
Massey Sta			1									
Sault Ste. Marie									1			
Victoria Mines			1									
Webbwood			1									
			3						1			4
Brant—												
Brantford											1	
											1	1
Bruce—												
Chesley						1						
Lion's Head						1						
Port Elgin						4						
Ripley					1							
White Church						1						
					1	7						8
Carleton—												
Ottawa						2	1	2	1	1	5	
						2	1	2	1	1	5	12
Dufferin—												
Orangeville						1						
Shelburne						1						
						2						2
Essex—												
Essex						1						
Kingsville			2									
Leamington					2							
			2		2	1						5
Grey—												
Durham						1						
Heathcote						1						
Markdale						1						
Meaford					1			1				
Owen Sound					1	1		3				
					2	4		4				10
Haldimand—												
Jarvis						1						
Selkirk					1							
					1	1						2
Halton—												
Georgetown						2					1	
Milton										1	1	
Oakville				1		1						
				1		3				1	2	7
Hastings—												
Coe Hill				1								
Belleville						1						
Madoc						1		1				
Trenton						1						
				1		3		1				5

Report from Laboratory of Provincial Board of Health for Month of December, 1910.
—*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Huron—												
Belgrave	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Brussels	1	.....	3	2	.....	.....	.....	.....	.....	.....	.....	.....
Dashwood	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....
Londesboro'	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Seaforth	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
	1	.....	3	2	2	1	.....	1	1	.....	.....	11
Kent—												
Chatham	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Thamesville	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	2
Lambton—												
Alvinston	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....
Arkona	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Pt. Edward	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Wyoming	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	2	1	.....	1	.....	.....	1	5
Lanark—												
Almonte	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Lincoln—												
St. Catharines	.....	.....	1	1	.....	3	.....	.....	.....	.....	.....	.....
	.....	.....	1	1	.....	3	.....	.....	.....	.....	.....	5
Middlesex—												
Ailsa Craig	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Mt. Brydges	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	2
Muskoka—												
Bracebridge	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....
Huntsville	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Pt. Carling	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	1	1	.....	2	1	.....	.....	.....	.....	5
Nipissing—												
Haileybury	.....	.....	.....	.....	.....	1	.....	.....	1	.....	1	.....
New Liskeard	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....
North Bay	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Sudbury	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	1	.....	1	3	.....	.....	1	.....	1	7
Northum'd & Durham												
Bowmanville	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Grafton	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Hope	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....
Warkworth	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
	.....	.....	1	1	.....	1	.....	.....	.....	.....	2	5
Ontario—												
Oshawa	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Uxbridge	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Whitby	.....	.....	.....	.....	1	1	.....	.....	.....	.....	1	.....
	.....	.....	.....	.....	1	3	.....	.....	.....	.....	1	5

Report from Laboratory of Provincial Board of Health for Month of December, 1910. —*Continued.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Oxford—												
Drumbo						1					1	
Ingersoll						1		1				
Innerkip						1		1				
Plattsville						1		1			1	
Princeton						1						
Tavistock					1							
Thamesford			1									
Tillsonburg						1						
Woodstock					1	4				1	7	
			1		2	10		3		1	9	26
Parry Sound—												
Powassan					1							
Sundridge			2									
			2		1							3
Peel—												
Caledon E.				2								
Mono Rd					1							
Palgrave				1								
				3	1							
Perth—												
Listowel								1				
St. Mary's						3						
Stratford								1				
						3		2				5
Peterboro'—												
Peterboro'	1	1	1	1	1			2				
Stratton					1			1				
	1	1	1	1	2			3				9
Prince Edward—												
Picton				2								
				2								2
Rainy River—												
Emo				1								
Keewatin											1	
				1							1	2
Renfrew—												
Pembroke											5	
Renfrew				1	1						5	
				1	1						10	12
Simcoe—												
Barrie								1				
Churchill								1				
Cookstown						1						
Elmvale						1						
Midland						2						
Penetang						1						
Phelpston								1				
Stayner			1									
Thornton		1		3								
Orillia					1	2		1				
		1	1	3	1	7		4				17

Report from Laboratory of Provincial Board of Health for Month of December, 1910.
—*Concluded.*

Municipalities.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Month.
	Release.		Diagnosis.							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Stormont, Dundas and Glengarry—												
Dunvegan	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	....
Osnabruck Centre.	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	....
	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	2
Thunder Bay—												
Port Arthur	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	1	....
	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	1	3
Victoria—												
Fenelon Falls	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	2	....
Lindsay	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	....
Little Britain	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	....
	.....	.....	.....	.....	1	.....	.....	2	.....	.....	3	6
Waterloo—												
Baden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	....
Berlin	.....	.....	.....	1	.....	2	.....	.....	.....	.....	.....	....
Galt	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	....
Hespeler	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	....
New Hamburg	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	....
Waterloo	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	....
	.....	.....	1	2	1	4	.....	.....	.....	.....	2	10
Welland—												
Port Colborne	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	....
Ridgeway	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	....
Marshville	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	....
Stevensville	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	....
Welland	.....	.....	.....	1	.....	1	1	1	.....	.....	.....	....
	.....	.....	.....	1	1	2	2	1	1	.....	.....	8
Wellington—												
Elora	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	....
Guelph	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	2	....
Hillsburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	....
Moorefield	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	....
	.....	.....	.....	.....	1	1	.....	.....	.....	.....	5	7
Wentworth—												
Hamilton	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
York—												
Eglinton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	....
Markham	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	....
Mimico	.....	.....	12	31	.....	.....	.....	1	.....	.....	.....	....
Thornhill	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	....
Toronto	3	2	1	5	7	39	.....	25	23	.....	5	....
Swansea	1	4	4	3	1	.....	.....	2	.....	.....	.....	....
Weston	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....
Grand total	6	8	37	62	37	106	4	52	28	3	50	393

NOTE.—Total number of specimens examined in December 393.

SYNOPSIS OF THE WORK DONE AT THE BRANCH LABORATORY OF THE PROVINCIAL BOARD OF HEALTH, KINGSTON, FOR THE YEAR ENDING DECEMBER 31st, 1910.

W. T. Connell, M.D., Bacteriologist in Charge.

Counties.	Diphtheritic Swabs.				Tuberculous Sputa.		Typhoid Bloods.		Miscellaneous Specimens.	Waters.		Total Number for Year.
	Release.		Diagnosis							Chemical.	Bacterial.	
	+	−	+	−	+	−	+	−				
Bruce	.....	.....	.....	1	1	7	1	2	1	.....	1	14
Carleton	.....	.....	.....	1	6	31	9	22	1	.....	.....	70
Dundas	.....	.....	.....	3	6	24	6	9	2	.....	11	61
Elgin	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Essex	.....	.....	2	.....	1	5	1	2	.....	.....	.....	11
Frontenac	77	92	40	162	85	236	201	390	98	.....	227	1,608
Glengarry	.....	3	7	1	11	12	2	3	1	.....	1	41
Grenville	.....	1	3	5	13	12	5	12	11	.....	10	72
Hastings	.....	.....	4	18	9	35	7	7	4	.....	1	85
Lanark	2	.....	4	3	6	3	6	4	2	.....	2	32
Leeds	.....	.....	5	17	19	33	26	14	5	.....	58	177
Lennox and Addington	.....	2	2	7	15	38	21	39	3	.....	22	149
Nipissing	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	1	3
Northumberland	.....	.....	3	1	4	9	4	3	.....	.....	3	27
Parry Sound	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Peterboro	.....	.....	.....	.....	1	2	.....	1	.....	.....	.....	4
Prescott	.....	2	3	3	.....	2	.....	1	.....	.....	.....	11
Prince Edward	.....	.....	1	.....	1	4	.....	1	.....	.....	2	9
Renfrew	1	1	.....	6	21	31	9	6	1	.....	2	78
Russell	2	3	4	10	1	10	1	1	.....	.....	.....	32
Simcoe	.....	.....	.....	4	3	6	17	18	.....	.....	.....	48
Stormont	.....	.....	5	5	2	14	1	6	8	.....	1	42
Thunder Bay	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Victoria	.....	.....	.....	.....	4	3	1	.....	.....	.....	.....	8
Welland	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Wentworth	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	3
	82	104	86	247	212	519	318	542	137	.....	342	2,589

SUMMARY OF ANNUAL REPORTS OF CITIES OF ONTARIO.

There is a general awakening in Ontario at the present time in Public Health matters. In reports received from Local Boards of Health for 1910 predominance is given to the increased attention and enforcement of, not new legislation, but of the long neglected laws and regulations that have been on our statute books for years. Local authorities find that they have the power in their own hand to deal with such matters, and in many instances are to be congratulated on the success of the efforts they have put forth to set this municipal machinery in working order.

Almost without exception the cities have added to their sewers, and in some of the older systems, where no provision is made for the treatment of the sewage, we find the recommendation for the adoption of this improvement coming, not as a mandate from the Provincial Board of Health, but as a suggestion from the local authorities.

Closely connected with this is the work of garbage collection. Gratification only is expressed where municipal collection is in force, while municipal authorities where this step has not been taken do not hesitate to designate private disposal of garbage as the greatest foe to general sanitation.

That most important question to our citizens—a pure water supply—is receiving due attention. The number of cities having their own local laboratory has been increased this year by two, it being stated in both instances that one of the main objects was daily examination of the water. Another city purchased a large area around the source of supply and have policed the same to guard against pollution.

The milk supply is as always a matter requiring close and untiring attention. However, if not the desired, at least a noticeable, improvement has resulted from municipal inspection of dairies, the water supplies of same and the examination of specimens, following up the delinquents with indictment. There remains, however, much to be wished for before a general standard is reached in our milk supply, and the fact that municipalities have the power necessary to control this matter should urge more active measures.

Inspection of milk leads to inspection of other articles of food, of which meat stands first. Present legislation provides for Federal Government inspection of all meat intended for export or for interprovincial trade, but the difficulty experienced is to obtain clean, healthy, certified meat for the local markets. Those of the larger municipalities which have established public abattoirs report a wonderful improvement in the meat supply, and where this has not been possible (owing to lack of funds, etc.), power has been obtained through local by-laws to inspect slaughter houses where meat for local consumption is killed, with the result that the public are getting meat of a much higher standard.

Many recommendations are noted. calling for the licensing and inspection of fruit and fish stores, bakeries and restaurants, placing them under the Local Board of Health.

The laundry question is a vexed one. The only remedy seems to be that carried out successfully in many places by licensing, subject to inspection by local health authorities, with penalty of a fine if sanitary conditions, disinfection, etc., are not satisfactory.

Noticeable preventive measures are being carried out in respect to contagious diseases. Three new modern isolation hospitals have been erected in 1910; two cities supply antitoxin gratis to the doctors, and very few of our cities are now without a plumbing inspector.

If the enthusiasm in this campaign for cleaner cities and healthier homes, for better food and improved sanitary conditions is not allowed to die out among our people, Ontario will look forward without disappointment to a wonderful improvement within a few years.

MILK.

Chatham. City inspector of dairies. Samples collected this year not from vendor but from consumer; all up to Federal Government standard and no preservatives found.

Guelph. Local by-law provides for Milk Inspector. All samples up to standard.

London. Veterinary Inspector. Supply satisfactory. Certified milk for children.

Peterboro'. Could be improved. Asks co-operation of milk vendors and dairy men. An inspector suggested to act *re* milk and sanitary inspection (now under police).

Port Arthur. Very unsatisfactory. M. H. O. urges licensing of dairies, to be outside city limits.

St. Catharines. Very unsatisfactory, as low as 1 per cent. butter fat.

Stratford. Very unsatisfactory, as to cleanliness and sanitary surroundings, but samples examined pretty well up to standard.

Woodstock. Dairies inspected by veterinary inspector twice a year and adopted use of "*Provincial Board of Health* Score Card, which is explicit and to the point."

SLAUGHTER HOUSES.

Chatham. All outside limits, but subject to city inspection and regulation. All meat brought to city must be covered with clean white cloths. Penalty—fine.

Ft. William. Public abattoir under construction.

St. Catharines. Wonderful improvement in meat supply—now, 75 per cent. is inspected and stamped "Approved."

Stratford. Very bad conditions in all slaughter houses, but lack of municipal funds forbids establishment of public abattoir. Inspection urged.

Woodstock. Public abattoir recommended for inspection.

GARBAGE.

Chatham. Municipal collector employed by householders desiring him.

Fort William. Municipal system, but installation of incinerator recommended.

Stratford. Very unsatisfactory, no municipal system.

Windsor. Great improvement, municipal system.

Woodstock. Very unsatisfactory, no municipal system.

RECOMMENDATIONS.

Fort William. Petition to Hon. the Provincial Secretary, re power to inspect dairies outside municipal limits. (See Milk Bill, 1911.)—Ed.; City Council for licensing of premises handling dairy products, fruits, fish and fresh meats; Dominion Government for inspector for new public abattoir.

Kingston. Seeking legislation, *re* sale, cutting and storage of ice.

London. Monthly inspection of bake-shops, restaurants and laundries.

Woodstock. Licensing of laundries, fruit stores and restaurants so as to bring them under supervision of Local Board of Health.

APPENDIX "A."

The reports appearing in this Appendix were received from the Secretaries of the different Local Boards of Health of the cities and towns of the Province, in conformity with section 60 of the Public Health Act, and have been edited by the Secretary of the Board.

BELLEVILLE.

H. A. YEOMANS, M.D., M.H.O.

I have the honor to herewith submit to you a report of the sanitary condition of the City and the work of the Health Department for the year 1910.

There were 57 cases of infectious diseases reported, where houses were placarded.

DIPHTHERIA.

Diphtheria was more prevalent than any time during the past three years, there having been 18 cases with 4 deaths and 14 recoveries.

This did not take on any form of epidemic but held on for some months, one or two cases at a time being under observation.

The furnishing of free antitoxine in all cases where the attending physician certifies that the family are unable to pay for it has been of greatest value in treatment, and no doubt has saved a number of lives.

SCARLET FEVER.

Nine cases with one death. These cases were all isolated in their homes and treated there.

TYPHOID FEVER.

We have been again very free from typhoid, and of the 34 cases treated in Belleville 22 were brought in from surrounding places, chiefly Campbellford and Trenton. There were five deaths, only one being a resident of Belleville.

This is very low as compared with other places, and when we consider the absence of sewers and the number of cesspools scattered through the City we must admit that there is considerable to be thankful for.

MEASLES.

Measles in a mild form was quite prevalent during the summer months, but as in most cases no physician was called it was impossible to get any record of cases.

MUMPS.

Mumps have been quite common during the past two months, but very few cases come under the care of any medical man—consequently they are never reported.

MORTUARY STATISTICS.

216 deaths have been recorded in the Health Office for the past 12 months, 113 males and 103 females. This is quite an increase, as the total for 1909 was only 149.

A number of aged residents have died during the past year: 16 aged from 85 years and up; 33 aged from 75 years and up to 85.

There were 39 infants under one year of age died mostly from digestive troubles during the hot weather.

18 have died from tuberculosis, and this is to be particularly regretted as the large majority of these cases are now considered curable, with proper surroundings, if taken in time.

During the year there has been a lot of trouble in regard to dumping refuse, etc., in the City, and in one case it was necessary to take proceedings before the Magistrate. Also the habit of some Front Street merchants throwing papers, boxes and other refuse into the river has given trouble. If we could only get the individual citizen to do his part and to keep his own place tidy and sanitary we would avoid all this difficulty and each would add so much to the cleanliness and beauty of the City. I would advise that next year, after the time allowed by law for cleaning up has expired, that where any nuisance is allowed to exist the property-holder be notified once and, in case of his failing to correct the trouble, that he at once be summoned before the Magistrate.

So much has been said and so many resolutions sent in to the City Council regarding the appointment of scavengers for the regular collection of garbage, that I feel the responsibility for action in this matter should be placed on the Council. There is no doubt but that such a system would be of great value, and I think the proper way to carry it out is for the City to take charge of it as a public work.

There have been a number of tests of the City water made during the year, and all of these but two, in August, were most favorable. The two in August were not really bad, but Dr. Amyot, of Toronto, recommended that the water be boiled as an additional precaution. The water from several wells has been tested and in no instance has any sample compared with the City water for purity and absence of harmful bacilli, although in most cases standing higher in color and flavor.

Milk, as supplied by the different vendors, has been frequently tested; three times by the Official Inspector, Mr. Kerr, and the samples have been generally satisfactory and up to the requirement of the present law. In all probability there will be new legislation at the next meeting of the Parliament of Ontario, and we look forward to much greater stringency in the methods of collecting, cooling, keeping and delivering the milk.

I would ask you to consider the advisability of making some regulation as to installation of baths, closets and urinals in public or private houses. At present, in the residential parts of the City, people construct cesspools and plumbers install baths, etc., and the Health Department know nothing of it unless at some time an investigation is made as the result of the complaint of some neighbor. Some systematic method of getting a permit for such work from the Health Department should be established and rigidly enforced. The plumbing should also be passed on by a competent plumber and, if not satisfactory, required to be made so before accepted by the householder.

In conclusion, I have much pleasure in stating that all work, such as inspections, fumigating, isolation and supplying of disinfectants, etc., entrusted to my Assistant, Mr. Richard Arnott, has been promptly and carefully performed.

My sincere thanks are due to the members of the Board of Health, particularly the Chairman, for the readiness with which they gave me every assistance in their power and for the many hours of time spent in assisting me in my duties.

BRANTFORD.

F. G. E. Pearson, M.D., M.H.O.

I herein present to you a brief report of the Department for the year ending October 31, 1910.

Mortuary Statistics.

For the period comprising this report there have been reported—exclusive of still births—282 deaths, which, in a population as taken from the Assessor's returns, viz., 21,964, gives us a mortality of 12.8 per thousand.

As to causes of death we find: Typhoid fever, 11; four being outside cases treated at hospital; scarlet fever, 2; measles, 1; cholera infantum, 19; pneumonia, 13; tuberculosis, 17.

With regard to ages, it was found: 76 under 1 year; 15 between 1 and 5 years; 77 over 70 years; and 20 over 80 years of age.

Contagious Diseases.

For the past 12 months there have been recorded 236 cases of contagion, an increase over last year owing to the smallpox and increased number of typhoids, taken up as follows:—

Diphtheria.

Of diphtheria we had 10 cases with no fatalities.

Scarlet Fever.

Of this disease there were 35 cases with 2 deaths, the majority of these occurring during the months of January and February, and traceable to an unreported case of a mild type where no medical attention was called and, through which a school became infected and a number of cases occurred before the source of contagion was discovered; but which, when located and the school disinfected and other precautions taken, soon ceased. This is, of course, the common history of these outbreaks and one which is often difficult to overcome; but with a more rigid inspection and thorough investigation into the cause of absence from school might, in many cases, be earlier detected.

SMALLPOX.

During the past summer we were unfortunate in having an outbreak of smallpox. The original case had occurred some time previously in a home just outside the city limits, and through the intermingling of children the cases first developed in children in attendance at a certain school, and not until several had developed the disease and infection had become evident in the adults at home was the disease either recognized or reported. Thus, when we were called to deal with the outbreak it had reached rather alarming proportions, having no less than 52 cases, convalescent and otherwise, to look after, 37 of which were treated in the Smallpox Hospital; and although some of them developed the severe type no fatalities resulted, which might have been otherwise had not the season been favorable.

And it is here I wish to call the attention of the Board again to the inadequate means of dealing with this disease. As you are well aware, the buildings and surroundings in which we have had to care for these cases is anything but what is desired for the care of the sick, and I feel that when persons are removed from their homes and isolated for the protection of the municipality they should be placed in congenial surroundings with proper appliances.

TYPHOID FEVER.

During the past twelve months there have been reported from the City 113 cases of typhoid fever, among which there were seven deaths. It was found that out of this number 17 cases were directly traceable to outside sources of infection, having come home ill from other parts, etc. 22 others were recent arrivals in the city. Upon investigation into the various milk and water supplies it was found that in no particular instance could the milk supply be made responsible, and no particular milk supply had to its credit more than another among its users. As to the various water supplies, some difficulty existed to ascertain the exact supply used, for in the moving about of the person attacked different supplies were used; but the majority showed that the home supply was, at least, the city supply, while the city and well water users stood next; while the wells, which are now but few, showed the least. Another factor investigated was the possible direct infection, for in some instances the surroundings were such as produce ill-health—such as overcrowded boarding-houses—while in other houses, which were good and new, a case would develop and in the course of two or three weeks others would follow. Here was evidence that infection was communicated and no doubt the house-fly was the carrier of infection on account of the non-disinfection of the stool from the primary case; and it is no doubt that an infection can be more readily conveyed to food, etc., in this way than the round-about way of milk and water.

WATER SUPPLY.

Again coming to water supplies, it is difficult to fix the source in many of the cases of typhoid, for as persons move about from place to place different supplies are used. Yet it is evident that where a public water supply is very largely used every effort should be made to keep that supply beyond suspicion, and in this connection I wish to say that though different examinations have been made, both by myself and others, during the past summer, at no time has colon or allied bacteria been found. Yet at certain times there have been conditions that were not normal, due to the fact that in the dry season, when the demands are greater, the supply was inadequate and to supplement it a more rapid filtration was done than was possibly good. Now in this connection, and to prevent further shortage, I would advise those in charge to have proper extensions made, that the supply will be pure and abundant for all seasons. And while looking to the future extension of the water system, it will not be out of place to take up the question of river pollution, a matter which enters largely into the dangers of water and ice supplies. Therefore, I would advise that in future an effort be made to prevent sewage along its course from being allowed to enter before being treated by septic tank or contact bed.

THE DANGEROUS HOUSE-FLY.

As brought out in previous reports, I believe from the fly nuisance and the dry earth system of closets we have a danger which, although we are getting rid of it gradually by the extension of sewers, yet until we have them entirely abolished the householder should use every precaution in the way of disinfection. Also, as a common attractor of the house-fly the open garbage barrel should likewise receive the same attention.

IMPROVED MARKET.

Moreover, in this same connection with regard to the infection of food, the common market should receive some speedy attention; for, from the contact with dust that blows from the four sides of the present market, and uncleanly waggons in which our meat is taken, and often the more uncleanly and besmeared coverings thrown over meat and vegetables, is certainly not conducive to good health. And not the least factors that tend to the same end is the handling of hides and the existence of a filthy, unkept closet in the market house. This matter has been called to the attention of the Council on many different occasions, and, since the market question has resolved itself to be kept where it is, the conditions above mentioned should be speedily improved and the city itself make the start. Then it would not be hard to have others follow.

TUBERCULOSIS SANITARIUM.

Another matter which seems to hang fire is the erection of a tubercular hospital. I had hoped that from the apparent progress, evident in the spring, we would have had such an institution; but from causes, apparently trivial, the whole matter stands at rest. And this in the face of the fact that yearly we are contributing more in deaths from tuberculosis than the combined death rate from all other contagious diseases, and at the same time sowing seeds of infection from those afflicted, by the fact that we have no proper means of isolating and caring for this class of patients. I therefore again wish to call your attention and that of the public to the necessity of having such a place, at the same time asking those in charge to make a final effort and overcome what difficulties are in the way and let us have something worthy of the purpose, to which so many have responded so liberally.

PUBLIC ABATTOIR.

As touched upon in a previous part of this report, viz., the careless and uncleanly manner in which meats, etc., are handled on the public market, I again wish to bring to the attention of the Board that to have a proper and efficient control and inspection of meats a public abattoir must be established. As this matter has been previously before the Board, you are all aware of its importance; and although the matter was taken up by a joint committee of this Board and of the City Council, nothing definite has been accomplished. I therefore urge that the matter be again brought forward and that a proper committee be appointed to procure data and have a by-law put through for the speedy completion of this proposition.

CHATHAM.

W. R. HALL, M.D., M.H.O.

I herewith submit my annual report for the year ending December 1st, 1910.

The Local Board of Health held ten meetings during the year. There were no special meetings held. His Worship Mayor Austin was present at seven (7) meetings; the Chairman, J. C. Wanless, eight (8); Dr. R. V. Bray, ten (10); Dr. C. R. Charteris, ten (10); Mr. W. R. Baxter, nine (9); and Mr. W. G. Richards, one (1); Rev. W. H. G. Colles, three (3). -

BOARD EXPENSES.

Total expenses incurred by the Board, $1,414.81. This includes the up-keep and improvement on the Isolation Hospital, salaries and all other expenses.

CONTAGIOUS DISEASES.

The City has been exceptionally free from contagious diseases this year.

Scarlet fever, three distinct outbreaks, only three cases, no deaths.

Diphtheria, six outbreaks, only eight cases, one death.

Typhoid fever, twenty-five (25) cases, two deaths.

Consumption, fourteen (14) cases. So far, this disease is only reported after death. An effort should be made to have these cases reported next year as soon as recognized.

A few cases of measles, whooping-cough and chicken-pox occurred, but were not reported. An effort should be made to have them properly reported next year.

VITAL STATISTICS.

One hundred and twenty-five marriages were registered.

One hundred and seventy-eight births, 89 males and 89 female, were registered.

Two hundred and seven deaths, 96 male and 111 female, were registered. Fifty of these registered deaths were of persons whose homes were in outside municipalities, many of whom were brought to our institutions for treatment; deducting these from the total, one hundred and fifty-seven (157) might be credited to the City.

Marriage rate, 10.5; birth rate, 14.8; and death rate, 12.08 per cent.

The rates last year were respectively: Marriage, 10.9; birth, 15.6; death, 10.2.

AGES AT DEATH.

Still-born and premature births, 12; under 1 year, 27; from 1 to 5 years, 17; 5 to 10 years, 8; 10 to 15 years, 3; 15 to 20 years, 8; 20 to 25 years, 3; 25 to 30 years, 8; 30 to 35 years, 8; 35 to 40 years, 4; 40 to 45 years, 5; 45 to 50 years, 9; 50 to 55 years, 6; 55 to 60 years, 15; 60 to 65 years, 9; 65 to 70 years, 14; 70 to 75 years, 13; 75 to 80 years, 20; 80 to 85 years, 11; 85 to 90 years, 4; 90 to 95 years, 3.

Consumption caused fourteen (14) deaths and cancer sixteen (16) deaths. A rather high death rate in the latter disease, .125 per cent.

GARBAGE.

Our garbage by-law, although not perfect, is giving fairly good satisfaction and is a great improvement on the conditions that existed previous to its passage.

Three hundred and eleven householders employ the appointed garbage collector, forty-one (41) more than last year.

NUISANCES ABATED.

The City Scavenger buried 320 dead animals during the year; 192 of these were dogs, chiefly destroyed on account of the strict anti-rabies precautions observed.

208 yards were cleaned and 1,084 closet pits emptied by the Inspector's orders.

Five hog-pens were condemned and ordered discontinued.

One lot of bedding, which was exposed for sale on the public market, was seized and destroyed.

SLAUGHTER-HOUSES

Are all located outside of the City limits, but subject to our inspection and regulation, and are frequently inspected. Only one suspension for a few days took place this year on account of uncleanliness.

One butcher was fined for violating the by-law requiring meat brought into the City to be covered with clean white cloths, and one was fined for exposing meat unfit for human consumption.

Two lump-jawed cattle were ordered slaughtered and their carcasses destroyed.

MILK SUPPLY.

The Inspector reports quite an improvement this year in the dairies, especially in the water supply. Much is yet to be done to make them models of their kind.

This year we departed from our usual custom in collecting milk samples for examination as to purity, etc. Instead of collecting all the samples from the peddlers' wagons, we got most of our samples from the consumer, who procured them for us. In this way the vendor did not know the particular time his product was examined. Fifty-six (56) samples were examined. All were found up to the Federal Government standard, and none had been treated by preservatives.

FORT WILLIAM.

R. E. WODEHOUSE, M.D., M.H.O.

In accordance with the provisions of The Public Health Act, I herewith submit annual report for year ending Nov. 15th, 1910.

I have been Officer of Health for eight months and Officer of Sanitation six months. I must say the occupancy of the latter office adds wonderfully to the grasp of conditions exactly as they are by this Department and makes the work of the Department much more efficient. I have to thank your honorable body for its excellent co-operation and sympathy throughout the year and for the advances of the year in this Department, namely:—

1.—Erection and equipment of fireproof, modern Isolation Hospital, I think the most complete in the Province.

2.—Establishment of a laboratory for chemical and bacteriological examination of milk, water, swabs of diphtheria, bloods of typhoid and sputa of consumptives.

3.—Your stand *re* medical school inspection, which has been acted upon favorably by the Department of Education.

4.—Your active crusade for the betterment of our milk products. The dairy conditions have materially improved and same will be more evident during 1911.

5.—Your assistance to the Council in demanding construction of sewers.

6.—The work of our City Council in acquiring all the land within the drainage area of Loch Lomond and the policing of same to prevent contamination of this pure water supply by picnic parties and others.

One very weak link in our water supply from a health point of view and also, I should think, from that of fire protection, is the pipe line under the Kaministikwia River. Your Honorable Board should make every possible effort and assist our Engineer in getting a concrete tunnel here, which will prevent breakages and make the repairs of leaks possible without danger of contamination from this filthy current of sewage-impregnated water. We have had but one report of our City water containing colon bacilli this year. The water, before it crosses the river, has always been reported pure, The pipe line under the river was broken and under repair for two weeks previous to sample being found infective.

I would recommend that your Honorable Board press the City Council to remodel their garbage collection by-laws in reference to putrefactive garbage, that there be no extra charge for amounts over two bins a week, and that the onus of keeping the City clean, sweet, free of flies from this source, and therefore healthy, be upon the Health Department and the Scavenging Department. I think the Engineer's Department will bear me out that the present regulations are practically unworkable, and certainly by the time Police Court proceedings are taken very insanitary, besides those who contribute an excess of two bins are nearly always tax contributors much in excess of the ordinary two-bins-a-week householder.

Our methods of disposal of garbage of all kinds is, I think, quite inadequate from a health point of view and economy. The present dumping ground is a menace to health to our City and, further, this ground will be subdivided in City lots during the next ten years, when excavations for dwellings will result in much disease and perhaps as costly an epidemic as that in Winnipeg a few years ago. An incinerator would shorten the haul, therefore shorten a very objectionable, insanitary proceeding and reduce expense. It entirely destroys all material without giving off any odor and can be placed in the heart of the City, as is done elsewhere, without detriment to surrounding property.

I would suggest that your Honorable body memorialize the City Council upon the matter of sewer connections for all buildings. The City is making excellent progress in sewer construction. It appears to me we must adopt the same drastic methods as in Winnipeg. Our present methods here have met with the same dismal failure as elsewhere. The City Council has the power to construct all connections to building and charge same to property, to be returned as taxes; this done we could forcibly remove dry closets, and plumbing would have to be installed and would be no hardship to the poorest owner. The dry closets are a most dangerous foe to health and an eyesore quite overbalancing any street improvements.

Medical school inspection has, I believe, been instituted by the Board of Education at its session last night. This will be a great boon in controlling epidemics peculiar to children.

All the improvements we have power to institute in the conduct of dairies have been enforced. What we most need is the power to inspect and force outside dairies to comply with our requirements. Your Honorable Board should memorialize the Honorable the Provincial Secretary as to our position, our epidemic of infantile summer ailments and the power we lack to improve same.

The licensing and inspecting of all premises handling dairy products, fruits, fish and fresh meats is absolutely necessary and such an ordinance should be asked for from the City Council.

We now have a public abattoir under construction and it behooves your Honorable Board to memorialize the Dominion Government as to the appointment of a Government Inspector for our City.

The total births for the year are 511, of which 21 were still births and four were illegitimate.

The causes of deaths and their occurrences as to months is attached in tabulated form. The infectious diseases are also tabulated, as to monthly occurrence.

INFECTIOUS DISEASES AND DEATHS FROM SAME.

Diseases.		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Diphtheria	cases	....	2	1	2	1	1	....	2	1	....	....	....	10
"	deaths	....	....	1	....	1	....	....	1	....	....	....	....	3
Scarlet Fever	cases	5	6	4	2	2	3	6	5	3	2	....	....	38
"	deaths	....	....	....	....	....	....	....	....	....	....	....	....	....
Typhoid	cases	....	....	....	1	2	2	3	25	51	4	....	....	88
"	deaths	1	....	....	1	1	....	....	2	2	2	3	....	12
Measles	cases	....	1	3	4	54	113	9	2	....	12	....	....	198
"	deaths	1	....	1	....	....	4	1	....	....	3	....	....	10
Tuberculosis	cases	....	....	....	....	....	....	....	....	....	....	....	....	....
"	deaths	2	1	4	4	4	1	1	....	2	1	1	1	22
Ileo Colitis	cases	....	....	....	....	....	....	....	....	....	....	....	....	....
"	deaths	....	....	....	....	3	1	35	28	9	5	1	....	82

DEATHS FROM ALL CAUSES.

Diseases.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Diphtheria	....	....	1	....	1	....	....	1	....	....	....	....	3
Scarlet Fever	....	....	....	....	....	....	....	....	....	....	....	....	....
Typhoid	1	....	....	1	1	....	....	2	2	2	3	....	12
Measles	1	....	1	....	....	4	1	....	....	3	....	....	10
Tuberculosis	2	1	4	4	4	3	1	....	....	3	....	....	22
Ileo Colitis	....	....	....	....	3	1	35	28	9	5	1	....	82
Still Born	5	....	3	1	3	3	1	2	1	3	1	2	25
Old Age	1	1	1	1	1	....	1	1	....	....	1	1	9
Alcoholitis	....	....	....	....	....	....	....	....	....	....	1	1	2
Accidental	7	2	3	2	3	4	7	1	3	....	3	6	41
Other causes	8	7	9	8	13	10	8	9	16	17	7	10	122
Total	25	11	22	17	29	25	54	44	31	33	17	20	328

GUELPH.

H. O. Howitt, M.D., M.H.O.

We have a very satisfactory report for the year just closed, in fact the best for a number of years.

There occurred in Guelph in the year ending December 1st, 1910, 194 deaths. Of these 194, a considerable number were those of people from a distance undergoing treatment in the Guelph hospitals and Homewood Sanitarium. If we divide life into decades of ten years, we find that:—

The number of persons who died between	1	and	10	years is	73
" " "	10	"	20	"	6
" " "	20	"	30	"	9
" " "	30	"	40	"	14
" " "	40	"	50	"	11
" " "	50	"	60	"	8
" " "	60	"	70	"	27
" " "	70	"	80	"	27
" " "	80	"	90	"	16
" "	over 90 years of age				3

It will be noticed that the first, seventh, eighth and ninth decades (namely, the extreme of life) claim the great majority of deaths. The tenth is again small, because so few reach that age.

Of the 73 deaths of the first decade, those under two years of age, namely, the infants, give us the infant mortality. Now, 65 of that 73 were of two years of age and under, and if we deduct from this 65, the number of "still births" and "prematurity of births," which number 26, we have left 39. Now, of this 39, 16 or over 40 per cent. are reported as having died of some form of gastro-intestinal disease, such as summer diarrhœa, etc. Now, gastro-intestinal diseases of infants nearly always occur in bottle-fed infants, namely artificial feeding and cow's milk. In recent months considerable work has been done on the infection of milk. It has been found that infection of milk has been generally transmitted by the fly, generally at the source of supply, where large manure heaps collect and in which flies breed and then carry the infection from the manure heaps to the milk pails which contain the warm milk—suitable for the breeding of bacteria. This, at or after twelve hours, reaches the consumer filled with the germ which has been found frequently to cause so much intestinal trouble in children. Now, if the fly which transmits the infection can be eliminated a great many of the deaths among infants can be prevented. This would be brought about by inspection of the sources of supply of milk to the city and prevention of breeding places at manure heaps. The Ontario Government has now given us control over the sources of supply. Our local by-law will provide for an Inspector. So in the future we expect to have purer milk or perhaps even certified milk and our infant mortality should be less.

THE CAUSES OF DEATH.

The chief causes of death reported were as follows:—

Pneumonia, 12; typhoid fever, 5 (one of which was complicated by pneumonia); diphtheria, 2; alcoholic, 4 (two of which were from a distance undergoing treatment in Guelph at an institution); cancer, 9; Bright's disease, 3; infantile paralysis, 2; accidental, 3; pernicious anæmia, 2; diabetes, 1; tuberculosis, 9.

Three of these tubercular cases were new arrivals in this country of less than 12 months, who had already contracted the disease. These nine deaths due to tubercular infection probably could have all been prevented had we an institution for the treatment of such cases, and the treatment commenced early. The local hospitals cannot be expected to take an advanced case of tuberculosis and allow the case to mingle with other patients. The homes from which these cases come generally afford the worst possible conditions for the treatment of the disease. It is high time that public interest be aroused to the necessity of the erection of a local sanitarium for tubercular patients.

DIPHTHERIA.

There were 29 cases of diphtheria treated at the General Hospital and one at St. Joseph's last year, and eight cases were treated outside of the hospitals. There were two deaths.

SCARLET FEVER.

At St. Joseph's Hospital there were 34 cases of scarlet fever (all of which were city cases). At the General there were 81 admitted during the year and some 30 cases were treated outside of the hospitals. There were two deaths from scarlet fever, one an infant and complicated with pneumonia. The number of cases of scarlet fever is quite large. The greatest number at any one time (30) was in January last, when the epidemic was at its height and about the time when it was deemed necessary to close the schools.

ISOLATION HOSPITAL.

,These figures, which do not include measles, chicken pox, rotheln, and other infectious diseases, and those cases which are for a time doubtful as to their nature, must immediately impress upon one the urgent need of an infectious hospital in the city. The present conditions are as poor as it is possible for them to be. There is no provision made for the isolation of doubtful cases. There is no ward permanently set apart for diphtheria alone, and scarlet fever alone. The ward must, as at present, be alternately used for different infections. This is far from ideal. The one ward for either of these diseases as at present, must necessarily contain all ages of both sex, grouped in one room in view of each other, with one common lavatory, one bath with wretched plumbing, the walls and floors not designed for the purpose of a hospital, ventilation not good. These conditions are put up with and have been put up with for some time, simply because that department of the City Council has not been able to come to a conclusion as to what the cost of a hospital for this purpose should be. The Public Health Act of Ontario states that the municipality must be responsible and provide for infectious diseases. It states also that an infectious hospital must not be under the same roof as another hospital, even if separated from the other hospital by a concrete wall. For this reason the Provincial Inspector of Hospitals condemned the present building, and a year ago the Board of Health drew the attention of the City Council to the matter and recommended the immediate building of an Isolation Hospital, and this has not yet been commenced. It is probable that the Provincial Board of Health may at any time take action, and the cost to the city be much increased. $20,000 or $30,000 expenditure would be infinitely better than the indefinite prolongation of the present conditions.

INFECTIOUS AMBULANCE.

The present conveyance, purchased years ago when discarded by a local cabman, for the purpose of conveying patients suffering from infectious diseases to the hospital, has long outlived its usefulness. Months ago the Board of Health recommended the purchase of a new conveyance. Apparently nothing has been done in the matter, and I draw your attention to the need of an infectious ambulance built as an ambulance, capable of being changed on to runners in the winter, and would suggest that it be stored at some suitable place, the key to be obtainable at the Police Court or the City Clerk's Office, so that anyone could rent a horse, or use their own, if they wished to save the expense, which is now $2.00, of making the trip.

MILK.

Taking advantage of the milk by-law of last year, tests were made from the milk of some twenty dealers. The milk was found up to the standard, in fact well above the standard as regards the fats, proteids, etc., but a bacteriological test was not made. Next year we hope to have a more rigid inspection not only of milk, but of the sources of supply, this power having now been granted by the Government.

TYPHOID FEVER.

Although the hospitals, before the introduction of the new water supply, were each Fall crowded with cases of typhoid fever, this year it is as unfounded as last year, city cases furnishing less than an average of one per month. Of these the majority had a water supply, not of city water, but of well water. The tests, chemical and bacteriological, made of the city water last year again show that the water supply of the City of Guelph is excellent, and surpassed by none.

THE NEW HEALTH BY-LAW.

The new Health By-law will place in a concrete form and make known to everyone the Health regulations as pertaining to the City of Guelph, and will do away with many nuisances, such as those due to smells and the harboring of animals in the outlying districts, which were difficult to deal with formerly, and will provide an Inspector, who, under the Board of Health, will be better able to look after the sources of milk supply, bake-shops, abattoirs, inspection of yards, collection of garbage, etc.

SEWAGE DISPOSAL.

As the Committee, recommended by the Board of Health, is at present taking up the case of sewage disposal and has not yet reported, the case of sewage disposal is not gone into in this report. There is a balance of $15,000 set apart for this purpose and will be used at once if necessary.

HAMILTON.

J. ROBERTS, M.D., M.H.O.

Following is the report of the Health Officer for the year ending October 31st, 1910:

VITAL STATISTICS.

During our statistical year there were registered with the division registrar 1,966 births as compared with 1,691 for 1909, and 1,757 for 1908, representing a birth rate of 27, 26 and 27 in round numbers for the years 1910, 1909 and 1908 respectively. These figures make a very decided improvement over those for the three years preceding, 1907, 1906 and 1905, in each of which the birth rate was only 22 per thousand of the population. The last report of the Registrar-General gives a birth rate of 32 per thousand for nineteen cities in the Province, which is evidently too high and easily accounted for when it is seen by the tables that the estimated population for Hamilton in 1908 is 55,000, whereas the figures of the Assessment Commissioner, probably below the actual, give us 64,087 people in that year. The gratifying increase in our birth rate may in some measure be attributed to the influx of a foreign element with which family limitation has not yet become popular and which has not yet become permeated with the tendencies and ideas of American civilization. Steady employment and good wages, the accompaniment of our industrial activity, have no doubt facilitated the establishment of homes and the rearing of families. It is in any case consoling to our moral sense and flattering to our civic pride to feel that these have been the principal factors in the substantial increase of our baby populaton.

The number of deaths for the year was 1,141, or 108 in excess of the number of deaths in 1909, and 131 more than in 1908. Excluding still births, we have a mortality of 1,021, in comparison with 925 for 1909, and 898 for 1908, or a death rate per thousand population in 1910, 1909 and 1908 of 13.8, 13.1 and 13.4 respectively. The death rate for the Province in the report just issued for 1908 is 14.6. Malformations and diseases incident to infancy and early childhood have been responsible for 318 deaths, an increase of 43 over 1909, and of 25 over 1908; but notwithstanding the large increase in the total number of deaths for the year there has been practically no rise for several years attributable to premature and still births, but, on the contrary, a uniform steady percentage decrease. Of the total mortality, for 162 deaths, or 15.7 per cent., reportable diseases are responsible. The aggregate number dying from these diseases in 1909 was 160, or 17.3 per cent. of the total deaths from all causes. 98 deaths were due to diseases of the circulatory system, 134 to diseases of the respiratory system, 119 to diseases of the nervous system and organs of sense.

Cancer carried off 48 this year, as compared with 53 for 1909, and 49 for 1908.

Various accidents, including fractures, drowning, burning, shooting and railway accidents caused 46 deaths in 1910, 44 in 1909, and 34 in 1908.

Of the total deaths, 172 passed the three score and ten mark; 58 lived to see 80 or more years, while 11 survived 90.

INFECTIOUS AND CONTAGIOUS DISEASES.

3,141 cases of infectious diseases were reported during the year, and of this number 2,327 were measles, an epidemic of which prevailed from November until May. Measles is the most highly communicable malady with which we have to deal, and having once obtained a prevalence, is difficult to eradicate.

Excluding this exanthem, we have 814 cases of reportable diseases for 1910, 1,045 for 1909, and 1,007 for 1908. The other reportable diseases are given in the table subjoined.

Beginning with July and continuing through August and September we had an outbreak of *Poliomyelitis*, probably the first extensive and virulent one in this country, and similar in origin, course and sequelæ to the numerous epidemics which have now been recorded and described by epidemiologists in northern Europe, the eastern and the western United States. The great bulk of our cases occurred in young children of previously good or robust health. One or two young adults were stricken with it, and to my knowledge one healthy man over 45 has been left a helpless invalid by the disease, which, during its course, attacked the muscles of arms, shoulders, neck, legs, back and respiration, leaving him an absolute wreck.

The temperature in our cases ranged from 100 to 103 degrees F. In some cases there was vomiting, in some convulsions, in almost every case constipation. In a day or two the patient loses the power of one or both legs and cannot walk, play or stand. The paralysis commonly extends to the arms, the back muscles and the neck muscles, so that the little sufferer cannot raise himself up, but has only a limited motion of the head from side to side. In one or two cases the child was helpless except for the power to move the arms and hands. In four or five days or a week the constitutional symptoms largely disappear and some power of movement begins to return. The muscles may rapidly recover and in a week or two the patient to all intents and purposes is as well as ever. This rarely happens. In the great majority of cases the muscles remain limp, cold and lifeless. Sensibility of the skin is not impaired, but there is an absence of tendon reflexes. Paralysis of the bladder was present in a few cases. In the mild cases where paralysis was limited to one leg or one arm or one side of the face there has been considerable recovery and restoration of functions, but the severe cases, even after the lapse of some months, present a hopeless prospect. In two or three patients the disease was rapidly fatal in type, involvement of the muscles of respiration and swallowing being quickly followed by death, with all the symptoms of a bulbar paralysis.

As to prophylaxis we know little, if anything, as yet. Isolation and quarantine may or may not be necessary as in scarlet fever or diphtheria. We thought it wiser to be on the safe side by placarding, so that the public may be warned at least of possible infective foci.

MEDICAL INSPECTION OF SCHOOLS.

Medical inspection of schools is continuing to produce good results. With the foreign population pediculosis and personal uncleanliness is difficult to eradicate and requires constant attention. Scabies is much less prevalent than formerly.

A determined effort will be made this year to establish a dental infirmary, something I have been advocating strongly for the past four or five years.

The school nurse, during the past year, has given particular attention to tuberculosis among school children. Through her painstaking efforts a score or more of early cases have been detected at the dispensary and sent to the sanatorium. In these cases treatment has been productive of splendid results. A school has been established on the grounds and maintained by the Board of Education in order that the education of these sufferers may not be neglected.

There remains for me only to express the hope that the recently established laboratory, with a competent man in charge, will be of great service to our department in facilitating correct diagnosis of disease and in furthering the cause of Public Health

REPORTABLE DISEASES FOR 1910.

Disease.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September	October.	Total.
Diphtheria	11	18	20	21	10	9	14	11	9	12	11	6	152
Mumps	..	1	....	....	1	....	1	....	....	....	1	2	6
Smallpox	....	....	....	....	1	....	....	....	1	....	....	....	2
Chickenpox	12	7	14	2	20	24	9	8	....	1	7	3	107
Consumption	....	1	2	4	8	14	10	12	4	9	6	9	79
Poliomyelitis	....	....	....	1	....	....	....	1	10	72	12	2	98
Whooping Cough	1	....	3	2	3	13	9	11	5	2	8	5	62
Typhoid Fever	8	1	1	2	1	....	....	....	2	17	27	21	80
Scarlet Fever	25	21	15	18	36	21	19	24	14	7	15	6	221
German Measles	....	....	....	....	....	1	....	....	1	1	....	4	7
Measles	93	249	708	740	377	131	20	6	....	....	....	3	2,327
Total....	150	298	763	790	457	213	82	73	46	121	87	61	3,141

DEATHS FROM REPORTABLE DISEASES FOR 1910.

Disease.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	Total.
Diphtheria	1	1	5	4	3	2	1	2	1	1	1	1	23
Scarlet Fever	1	4	....	....	1	....	....	1	....	....	....	1	8
Typhoid Fever	1	4	....	1	1	....	....	....	....	2	....	3	12
Measles	1	2	3	3	5	4	....	....	....	....	....	....	18
Whooping Cough	....	....	....	....	3	....	....	....	2	1	1	....	7
Erysipelas	....	....	....	1	....	1	....	....	....	....	....	....	2
La Grippe	....	....	....	....	....	....	1	....	....	....	....	....	1
Consumption	6	4	3	3	12	6	5	7	5	10	5	5	71
Tuberculosis (other forms)	1	1	....	....	3	....	2	....	1	....	1	1	10
Poliomyelitis	....	....	....	....	....	....	....	....	....	5	5	....	10
Total	11	16	11	12	28	13	9	10	9	19	13	11	162

REPORT OF FOOD AND DAIRY INSPECTOR.

C. SHAIN, V.S.

I have the honour to submit the report of the Food and Dairy Inspection department for the months of July, August, September and October, also the work done since my appointment on June 15th, 1910.

There have been inspections made of the various places where food is prepared, stored or offered for sale, and the findings were as follows:

Restaurants.—The majority of proprietors appear glad to have inspection made of their premises and are willing to do anything which will tend to improve their sanitary condition and the quality of the food offered to customers. One of the best advertisements they could have would be to throw their kitchens open to the public inspection.

Butcher Shops—These in most instances are conducted in a satisfactory manner. They should be more particular in the matter of protecting their meat from contamination by dirt, dust and flies. Some of the ice boxes are ill-ventilated and hence foul-smelling, so that meat placed in them for preservation during the hot months becomes quickly decomposed and unfit for use.

City Meat Market.—Until there are established, especially in the cities and larger towns, public abattoirs where the entire meat supply of the municipality is subjected to inspection before and after slaughter, this important food commodity cannot be satisfactorily passed upon. Under the present system viscera and offal, on which we mainly depend for the detection of disease, are removed by the butchers at the place of killing, so that the inspection is only a dressed inspection with the carcass and body lymphatic glands to guide us.

However, a considerable quantity of meat has been seized and destroyed.

Fruit Stores, wholesale and retail, in some cases were found in an unclean and unsanitary condition. They are visited frequently during the fruit season, and here also we cannot too strongly impress on those handling the produce the necessity of not exposing it to contamination by flies and street dust, not to speak of the advisability of having it well above the street level in order to avoid the objectionable tendencies of passing dogs.

Candy Shops, wholesale and retail.—There are a number of small stores where candy is manufactured in basements, also in living-rooms. Candy should be made in rooms used exclusively for the purpose; and needless to say the walls, ceiling and floors, furniture and utensils should be scrupulously clean.

Street peddlers of ice-cream should be licensed by the Health Department only. Carts, utensils and everything connected with carrying on of this traffic should be under rigid inquiry and inspection. In fact there is ample necessity for legislation which shall bring the preparation, handling and distribution of all food products under better sanitary regulations.

Dairy Inspection.—Milk is the most difficult food to handle with success. It requires great care at the farm, care in its conveyance to the city, particular attention during its distribution by vendors, and lastly much more knowledge with respect to its preservation in good condition might be displayed by the consumer than is usually the case.

The milker is one of the important factors in the production of clean milk. His hands, clothing and milking utensils should be as nearly sterile as possible.

Only second in importance is it that the cows should be healthy, and the hair, particularly about the udders and flanks, kept entirely free from dirt and manure.

With these two requirements and a sanitary cow-byre we have ideal conditions for insuring a safe milk supply at the farm. Many of our dairy farms have not a good system of ventilation or sufficient light. Much bovine tuberculosis is caused by dark badly ventilated stables, the fact being overlooked that cows require fresh air to assist them in warding off disease.

In his report to the Milk Commission of the Ontario Government Dr. Roberts has summed up the essentials necessary to obtain a clean raw milk supply at a moderate cost as follows:

(*a*) The protection of the milk from infection by scarlet fever, diphtheria, typhoid and tuberculosis.

(*b*) Cooling the milk and keeping it cool or at least below 50 degrees, in order to prevent the bacteria which contaminate milk in spite of the most careful precautions.

(*c*) Keeping the utensils clean, because it is impossible to produce uninfected milk unless the vessels are comparatively sterile.

(*d*) Keeping the milk tightly covered.

(*e*) Keeping the cows as clean as possible.

(*f*) Keeping the milkers hands and clothes clean.

(*g*) Keeping the barns and surroundings in a wholesome and thoroughly sanitary manner.

We use a score card system for dairy inspection. Each dairyman is supplied with a copy of his score, and one is kept on file in our office.

The dairymen, in nearly every instance, supplying milk to this city have responded to my requests in a very satisfactory manner. We have drawn up a written agreement asking compliance with our revised By-law of June, 1910. This By-law embodies probably the most advanced municipal legislation in Canada with respect to milk. Up to the present no milk vendor has refused to sign.

KINGSTON.

A. R. B. Williamson, M.D., M.H.O.

The year that has just closed has been a busy one for all of us, rather in the carrying out of previous legislation than in the introduction of new, and yet even in the latter there are important points to record.

The sanitary regulation passed in July, 1909, has been more thoroughly enforced than any by-law of recent years, and while there are undoubtedly a number of owners who have not complied, the fact of there being only one inspection per year renders it impossible to find out all such cases until the next annual inspection. I feel that it is my duty in this connection to point out to the Board that as the policy in this matter has been to enforce the law in all cases they should urge on the Council the necessity for providing properly constructed tile sewers in the district where such improvements exist, as experience shows that the old stone sewers, many of which are shallow, are entirely unsuited for such purposes.

I regret to have to report that twice within twelve months the City has suffered from an epidemic of typhoid, followed in each instance by a number of deaths, owing to leaks in the intake pipe of the water works system. After a number of attempts it has been found impossible to repair the old leaky section and a new section has been ordered and will be laid as soon as possible. In the meantime the water is being chemically treated by chloride of lime which is introduced in such quantities as to destroy all bacterial life and at the same time is insufficient to have any deleterious effect on the consumer.

New legislation has been introduced to better regulate the cutting, storage and sale of ice, giving greater guarantee of safety to the consumer.

Further new legislation is being sought through the Member for Kingston, to amend that section of the Public Health Act relating to trade nuisances, so that the local Board may have better control over such.

The whole question of sewage disposal and water supply are brought prominently before us by typhoid outbreaks. Our harbour is bound to become more and more infected as the sewage entering it is increased, and the time is at hand when we will have to either cease emptying sewage into the lake, or if the Government still permits it, to at least conduct it far below the mouth of the intake pipe. If this cannot be handled at once, then in order to be comparatively safe from danger of epidemics due to breaks in the intake pipe, it is questionable if the Board should not urge on the Council the policy of constructing a second intake pipe at some distance away from the old one and following a different course, so that should one pipe be injured, the other can be used until such injury is repaired.

LONDON.

T. V. Hutchinson, M.D., M.H.O.

I beg to lay before you a report of the health, mortality and sanitary condition of the City for the year ending November 15th, 1910.

In doing this it gives me great pleasure to state that the health of the City has never been better. The sanitary condition compared with many other cities is good, in proof of this, there was only one death from Typhoid Fever during the year, the same as in 1909. The total number of deaths from all causes was 799, deducting 35 still-born, leaves 764; Pneumonia is credited with the largest number, namely 54; Consumption is second in the race with 42, compared with 40 last year; Cancer comes next with 35 deaths, 14 less than 1909; 209 cases of Scarlet Fever were reported to the Department with only 9 deaths, showing the disease to have been of a mild type; 99 cases of Diphtheria were reported and 7 deaths. There were 26 violent deaths as follows:

Accidents, 13; suicides, 4; railroad accidents, 4, and drowning 5.

Five deaths were caused by measles and 5 by whooping cough.

One case of smallpox, of which the patient recovered, and as usual, had not been vaccinated.

Periodical analyses of the City water have been made during the year, which showed it to be free from impurities, and safe.

The quality of milk supplied the City has improved, many samples exceeding four per cent. of butter fat. There is also an improvement in the cleanliness of the herds, dairies and in the handling of milk, due to some extent to the introduction of clean, certified milk. A baby worth having is certainly worth saving, and although it costs more to produce and deliver sanitary milk, than to produce unclean and dangerous milk, it is imperative that milk be produced under the highest sanitary conditions.

Owing to the interest taken in the City and the demand for pure, clean milk, I will as briefly as I can, describe the production and preparation at the Cedar Terrace Dairy, that supplies Certified Milk for the Milk Commission.

At the regular meeting of the London Medical Association held in May, 1910, the Association appointed a Milk Commission, consisting of the following members: Drs. D. H. Arnott, W. E. Bateman, W. H. Beal, H. Meek, H. A. McCallum, John A. McGregor, W. Tillmann, and E. L. Williams. This Certified Milk Association was organized to try and secure the improvement of the milk supply and obtain the co-operation of dairymen. The Commission immediately placed itself in communication with those carrying on similar work in Toronto. The London Board of Health was approached, and as a result, two members of the Milk Commission, Dr. E. L. Williams and Dr. D. H. Arnott, went to Toronto, at their own expense, and were accompanied by Dr. Tamlin and myself representing the London Board of Health. We saw there the practical production and care of Pasteurized and Certified Milk, through the kindness of the Milk Commission of the Academy of Medicine of Toronto. Members of the Commission, accompanied by Dr. Tamlin, went to Toronto again during the first week of June, when a whole afternoon was given to the milk question by the Canadian Medical Association in general session.

In order to get Certified Milk on the market for the warm months of 1910, it was necessary to select a dairy and a herd that had been tested with tuberculin, and known to be free from tuberculosis, and a dairy and surroundings that also were up to the standard required. The Commission selected the Cedar Terrace Dairy, taking as a guide the methods used by the Milk Commission of the Canadian Medical Association.

The question of obtaining Laboratory facilities was a serious one, and it was decided to lay the matter before our Board of Health and see if they could not undertake the laboratory part of the work. The Board met in special session on May 27th, at the request of the Milk Commission, and the importance of Certified Milk was laid before them. The Milk Commission was favourably received, but as all the estimates for the year had been passed, the Board felt they were unable to undertake the work. However, preliminary tests were made during June in the Laboratory of Dr. John McGregor, and the Commission was delighted to find this dairy could produce milk satisfactory in every respect.

The herd was tested with tuberculin by Dr. Tamlin, the Veterinary Surgeon of the Milk Commission, and all cows passed the test. It was arranged to supply this milk at 10c. per quart in not less than quart bottles, and to deliver it anywhere in the City. Certified milk was selling in Toronto as high as 16c. per quart, and the Commission was pleased to find that they would be able to obtain an equally good milk at such a reasonable price. Now that the production and delivery of Certified Milk was a certainty, several articles were published in the daily papers by the Commission, with reference to the importance and necessity in the preservation of infant life of a pure milk supply, and asked for money from the people generally, to carry on the laboratory tests and to supply the milk to infants and children of persons who were unable to pay for it; also a prominent advertisement was inserted in both daily papers for a week. As a result, a demand for Certified Milk was created, but only one contribution of money resulted.

In July last, the Laboratory of Victoria Hospital was reorganized and Dr. W. H. Beal, a member of the Milk Commission, was placed in charge. The Commission made arrangements with the Hospital Trust to have the bacterial examinations made at Victoria Hospital, at $2.00 per examination, and all the laboratory examinations at the Hospital for the Milk Commission have been paid for at that rate. During the first week of August, Dr. Arnott, one of the Commission, visited Detroit and Rochester, at his own expense, in order to look into the matter of Certified Milk in those places. He found that during July, 1910, the City of Rochester had fed 200 infants with Certified Milk, modified when necessary to suit the age of the child. The milk was distributed at five milk stations, in different parts of the City, and sold at the price of ordinary milk. Of these 200 infants, mostly from the poorer classes, only one died. The Commissioner came home with the desire to extend the work in London and the Milk Commission issued a circular letter to 125 of the most prominent citizens of London, describing their work and asking for funds to carry it on and lessen infant mortality. Only three persons responded to the appeal. However, the Commission succeeded in having the Certified Milk adopted in many homes and the demand reached 125 quarts daily. This result was very satisfactory; for not one case of Cholera Infantum occurred where the milk was used.

As a result of the interest aroused in the milk question by the campaign for Certified Milk, many dealers have already improved their methods of producing and handling market milk, and have announced their intention of producing Certified Milk, but so far this is the only dairy producing Certified Milk for the City.

As the laboratory expenses were increasing, and the funds of the Commission decreasing, the prospect seemed rather discouraging. The Commission asked the Board of Health to arrange with the Hospital Trust for the laboratory examinations, which the Board promptly agreed to, and took over the examination and inspection of Certified Milk, in October.

The Milk Commission is still active and working in harmony with the Board of Health, reducing infant mortality by supplying pure, clean milk.

I will as briefly as I can describe the process of obtaining Certified Milk at the Cedar Terrace Dairy:

1. An effort is made to have a carefully selected healthy herd which is then subjected to the Tuberculin Test by the Veterinary Inspector for the Board of Health, semi-annually, or oftener when deemed necessary, or when additions are made to the herd. The herd is kept in a clean, well-lighted and well-ventilated stable, with plenty of air space, fed wholesome food, let out to exercise, during the stabling season, in a clean yard where the cows have access to running water in a cement trough. The cows are curry-combed and brushed regularly every day; cleaned twice a day, and all excreta removed 100 yards away from the stable. The gutters and cement floors are sprinkled daily with lime, the bedding is chiefly sawdust.

2. The udders, having been well brushed, are washed or wiped off with a wet cloth and dried with a towel immediately before milking. Each cow's milk is strained into narrow topped milk pails through two thicknesses of cheesecloth, held in place by a tin collar. Each cow's milk as soon as drawn is carried to the dairy, one hundred feet from the barns, aerated, and strained again through several thicknesses of sterilized cheesecloth and cooled to 45 degrees Fahrenheit, by means of spring water running continually through the dairy, and ice.

3. The milk is immediately bottled at a low temperature, caps and wrappers put over the bottles secured with rubber bands, placed in crushed ice, and delivered in ice, at a temperature below 55 degrees, in their own wagons.

The average daily bacterial count per cubic centimetre of the Certified Milk produced at this dairy, in the manner described, during the two dangerous months to infant life, July and August, was only 1,153. This is very low. The Milk Commission in Toronto allow their Certified Milk to contain not more than 10,000 bacteria to the cubic centimetre in summer, and not more than 5,000 in winter.

The inspection of herds and dairies is not yet finished; so far, the quality of the general milk supply has been good. Several dairies have been found unfit, and prosecutions have resulted. The herds are inspected two, three and sometimes four times a year, or as often as may be deemed necessary by the Veterinary Inspector of the Board.

During the year several members of the Board of Health made a number of visits to different dairies in London and Westminster Townships, in order to see for themselves the conditions under which the market milk supplied the City is produced. These visits by members of the Board and the constant vigilance exercised by the Veterinary Inspector, Dr. Tamlin, are having a good effect in inducing cleanliness and better care of the herds.

Under the present regulations, a vendor cannot get a license until a permit is obtained from the Health Officer, and this is not given until his herd and dairy, or the dairy from which he may be purchasing, shall have passed a satisfactory examination by the Veterinary Inspector.

Under the consolidated by-laws of the City of London, we have power to refuse a license, as stated above, and prosecute for an infraction of the by-law, but under the Municipal Amendment Act of 1910, once a vendor secures a license we have no power to revoke it, no matter in what condition his herd and premises may be. The Municipal Act quoted above provides for this as soon as a by-law to that effect shall have been passed by the City Council. I would respectfully recommend that the Board of Health request the Council to enact this by-law, which will give us complete control of the milk supply of the City.

NIAGARA FALLS.

F. TELFORD, CHAIRMAN L. B. OF H.

It is with much pleasure that I am enabled to make a statement in re one of the most important matters pertaining to the general welfare of our City, namely, the state of the Public Health.

Last January I had the honour to be chosen as the Chairman of the Board of Health, and in laying down the reins of office I am happy to say that the City of Niagara Falls stands second to none in regard to this most valuable asset.

This is in a large measure due to the untiring efforts of our Medical Health Officer, Dr. F. W. E. Wilson, and the painstaking work of our Health Inspector, Mr. H. Webber,

Early in the year we were favoured by having the Ontario Government's Tuberculosis Exhibit for a week and had a record attendance at every meeting. There are at present in our City one or two cases of this dread disease of a particularly pitiful nature, and I do not think it would be out of place at this time to suggest that we are in absolute need of a building suitable for the proper treatment of such cases. It is the intention of the incoming Board to take hold of this matter with that end in view. We feel sure that when all the facts are assembled and the proper information placed before our citizens there will be found that spirit of liberality which will lead to the accomplishment of what will ultimately be the greatest charity in our midst.

The Vital Statistics are very gratifying, being: Births, 237; deaths, 129; marriages, 602, as against last year, births, 202; deaths, 113; marriages, 471. While the number of deaths this year is somewhat larger than last year it must be borne in mind that a large number were those poor unfortunates who lost their lives by accident, a condition that is always co-incident with the prosecution of public works of the magnitude of those that have been going on in our midst during that time. It must also be remembered that every body that is taken from the river is charged against our death rate. Taking these two facts into consideration, I believe our death rate will compare very favourably with any other spot on earth of a like population.

In regard to contagious diseases, we had brought to the notice of the Board 28 cases of Scarlet Fever as against 33 cases last year and 6 cases of Diphtheria as against 6 cases last year. None of these cases terminated fatally. At present the City is to be congratulated on the fact that there is only one case of Scarlet Fever in quarantine, and Diphtheria has been absolutely stamped out. It is interesting to note that at all times during the year the cases were scattered and at no time was there any apprehension of an epidemic.

The dog question was one of great importance that the Board was called upon to deal with and while there was some dissatisfaction with the law and its enforcement, it must be and is acknowledged that the result was for the good of the general community. During the regime of the law 77 dogs were destroyed by Chief Kimmins.

The collection and disposal of the garbage has reached a stage where the complaints regarding same has dwindled down to almost nil. In most of the cases where complaint was made it was shown on investigation that the trouble arose from the dumping of tin cans and other rubbish in the same receptacle with garbage.

I have been extremely fortunate in having the support of a good well-balanced Board, and must also add a word of praise to Chief John Kimmins and his able staff for the very valuable aid they have rendered on many occasions.

Dr. T. E. Watson, who has charge of the Veterinary department, is a very capable officer and his reports were at all times interesting and instructive, showing that the public were being safeguarded to the best of his ability with the limited means and accessories at our command.

In passing I may say that one of our Councilmen made a complaint regarding the milk supply. I immediately called a meeting of the Board to deal with the matter, at which Dr. Wilson submitted a plan for centralising Inspection, and Drs. Watson and Boulter thoroughly went into the question at issue. The result of that meeting, together with the suggestion of Dr. Wilson, was forwarded to the Council with the result that usually attends any recommendations sent from the Board. It was fyled and I suppose is dead and buried.

The Board is losing a very valuable man through the resignation of Dr. Boulter who has always taken a deep interest in all matters pertaining to the health of the City and who is possessed of a wide experience and practical knowledge that made anything he had to say of interest because of such qualifications.

I am informed by Dr. Wilson, and of my own personal knowledge am assured that the City of Niagara Falls is in better condition as to its general health than at any time in its history.

PETERBOROUGH.

A. W. McPherson, M.D., M.H.O.

I beg to submit for your consideration a report for the year ending November 30th, 1910.

It is with pleasure that I am able to state that during this time the City has been comparatively free from infectious diseases. As might be expected from last year's record, Scarlet Fever heads the list with thirty-four infected houses and about sixty cases. Among the number there was but one death. Diphtheria was very light. Only three families were affected, with a total of seven cases. Smallpox was not represented.

Typhoid fever has been very prevalent in the neighbourhood, but Peterborough has been remarkably free from it. Only seven cases have been reported. In following up the source, it was ascertained that two resulted from infected wells, one probably became infected while in Toronto, three resulted from contact with persons suffering from the disease and of one the source could not be definitely learned. There were no fatal cases.

The minor infectious diseases have decreased since last year with the exception of whooping cough. This seems to be fairly widespread throughout the City and vicinity.

It is with regret that I have to report the appearance of a small epidemic of Infantile Paralysis. Although the cases were not reported, the number might be placed at about 10 or 12, with at least 3 deaths.

In this connection, I should like to draw your attention to the new regulations which place Infantile Paralysis in the list of diseases which must be reported to the Health authorities. I might further add that with the exception of Scarlet Fever, Diphtheria, Smallpox and Typhoid, the various infectious diseases are not reported. If the minor infections were reported as they should be, we could get the co-operation of the teachers in controlling the epidemics. In this way the unnecessary exposure at school would be materially lessened and the number of children of school age who are kept at home on account of sickness in the family would, in the end, be minimized.

In looking back over the year we can congratulate ourselves on account of progress made. Since the last report our Isolation Hospital, with an accommodation for about thirty patients, has been begun and it is expected that early in the year it will be ready for occupation. Another move in the right direction is the establishment of a well-equipped laboratory for the examination of city water. This will obviate the necessity of furnishing a laboratory in connection with the new hospital.

But there are still many opportunities for further progress and many questions pertinent to the health of the citizens that must soon be met and seriously considered. To my mind the most serious is the milk supply. The excellent report of the Provincial Milk Commission has brought forcibly to our minds what has been done and is being done in other cities to secure a reasonably pure, clean milk. I would suggest that the matter be considered at an early date and steps be taken to secure the co-operation of the dairy men and milk vendors.

Another problem is the sanitary work. At present, as you are aware, the sanitary work forms part of the police duty. It seems to me that this is of sufficient importance to warrant the appointment of a Sanitary Inspector. From the standpoint of beauty as well as of physical comfort and health, we should insist on a proper standard of cleanliness of the lanes, backyards, vacant lots and outhouses. This cannot be satisfactorily accomplished under the present system, and if the milk question is considered, as it doubtless will, there will be additional duties for such an officer.

Last year I suggested the advisability of a scavenger system. From the financial as well as from the sanitary standpoint, this seems most expedient.

PORT ARTHUR.

C. N. Laurie, M.D., M.H.O.

In presenting my report for the year 1910, there is one thing which strongly impresses itself upon me, and that is the utter impossibility of ever having a clean sanitary City, free from disease and sickness, until the general public awaken to the fact that "prevention is much better than cure" and that "Cleanliness is next to Godliness."

There are thousands on thousands of dollars spent every year in this and all cities on the curing of diseases. There are many lives sacrificed which might have been saved if perfect sanitary conditions existed in regard to our dwellings, surroundings and food supplies. On the side of prevention there are perhaps a couple of thousand spent yearly. The day is coming when the public will awaken to the fact that it is cheaper and wiser to pay good men to spend all their time in an effort to grapple with the question of putting the City in a perfect sanitary condition, and thus do away with all sickness.

Perhaps the first thing to attend to is the water supply. Fortunately, this is an easy matter to arrange in our City. At our door lies one of the purest bodies of water in the world, which cannot be surpassed for drinking purposes, and yet is free from all hardness and salts, which makes it perfect for washing. As you are aware, we have had some trouble this year with the water on account of having to extend our intake pipe, then again the water and pipe were disturbed by the dredging operations being carried on for the new Dry Dock. As we know that more dredging will need to be done next spring, as well as a Breakwater built, the pipe should be extended out into the bay this winter to be far enough beyond all possibility of interference or contamination of the water for years to come.

Following the water supply in importance and closely connected with it is the disposal of the sewage. This is a subject which is now receiving world-wide attention. It is recognized everywhere that the old system of pouring the sewage into lakes or rivers to get rid of it and thus contaminating our water supplies is a fatal mistake. In many of the large cities they are now building Bacteria Beds to treat the sewage until the water is pure enough to be turned into the streams. I would respectfully suggest that now, when we can get all the land we need at a reasonable price, is the proper time to appoint a Committee to look into this matter and make a thorough investigation to find out the best and most scientific system and adopt it. Perhaps it would be wise to look into this before any general attempt is made to install a sewage system on the low swamp lands within our City borders, which districts need attention at the earliest possible date, as there is no doubt that the very unsanitary conditions existing in our Muskeg Districts are a serious menace to the general health of our City. There has been a great deal of sickness there during the year, in the hot months chiefly among children, many of whom died, and in the fever season there has been considerable sickness among the adult population. It is a fact that all new countries have serious typhoid epidemics every summer during the time called the fly season, and as our City is the centre of an immense district which is just opening up, we have each year a large number of sick from the surrounding country coming here to be treated in our hospitals and homes, thus bringing disease into our midst no matter how careful we may be ourselves. This is something we cannot help, as we have no control outside our City limits, but as it is a live, serious matter for us, we should impress upon the Provincial authorities to appoint Medical Inspectors residing in this District whose duties it would be to investigate every outbreak of sickness. At present if the outbreak is of a very alarming or serious nature, an inspector is sent out from Toronto, but a resident inspector would not need to wait until it became serious, he would act more as a preventive officer, by taking the necessary precautions beforehand.

The milk supply for our City is another important question for us to consider as it is such a large article of food, especially for young children. Unfortunately milk is very easily tainted and has often been the means of carrying sickness and death. As at present carried on, our milk supply is very unsatisfactory and the cause of a great deal of trouble. Any person who has a cow is permitted to sell milk. If they have three or more they are supposed to pay a small fee. We have at present a half dozen men who might be called dairymen and a large number of people who sell milk to their neighbours. Some of these people are clean, but a great many are dirty, and consequently, the milk is not kept as clean or in as sanitary surroundings as desired. We have also a great deal of trouble with the dealers putting water in the milk, and sometimes drugs to keep it from souring. These drugs are poisons and irritants when taken in any quantity. They are especially irritating to the stomachs of infants, and I have no doubt they are often the cause of bowel troubles in young children.

I think that it is time the milk question was handled in a more satisfactory manner. I would suggest that no one be allowed to keep cows in the City limits, and that an up-to-date sanitary dairy be encouraged by the City where the milk could be tested, cooled and bottled and delivered to the people at the lowest possible price. This will take some time to work out, but it might be left to a Committee to look into and report.

The Sanitary Inspector and myself have had a great deal of trouble during the year with dirty yards and lanes. We have had to summon a number of offenders before the Magistrate. However, under our new Sanitary By-law passed this summer, we have more control than we ever had before, and while far from perfect, the City is cleaner than ever it was before. We can only persevere in this matter and hope some day to accomplish the desired end. I am very pleased that your Council has appointed a Plumbing Inspector this year, as I think he is an officer very much needed.

Last spring we had a small outbreak of Smallpox which started in the Railway, Marine and General Hospital. I am pleased to say that we were able to get it under control before it spread very far.

Lately we have had a small outbreak of Scarlet Fever which is almost confined to pupils of the Central School. I am sorry to have to state that there have been five deaths. There were nine different families in which the disease developed, with nineteen cases in all. We are taking every precaution and I think we have it under control. Ten of the patients have been treated at the Isolation Hospital, and I desire to express my appreciation of the good work performed by the staff there.

I also want to draw attention to the great interest Mr. Seaman has taken in the different matters coming before the Board of Health during the year. He has spared neither time nor labour to give me every assistance he could.

REPORT OF THE CHAIRMAN, A. G. SEAMAN.

In presenting my report as Chairman of Board of Health for the year 1910, I cannot say it gives me pleasure as we have had too many cases of contagious diseases, especially of typhoid fever. I herewith give a list of contagious diseases as reported by our medical men.

	Cases reported.	Deaths.
Smallpox	6	0
Scarlet fever	23	5
Diphtheria	15	1
Measles	5	0
Whooping cough	0	1
Typhoid fever	33	21

I think you will agree with me that the number of deaths from typhoid are not in proportion to the number of cases reported. Your M. H. O. has taken this matter up with the Provincial Board of Health with a view of getting a fuller report next year. I would like to draw your attention to the low death rate from diphtheria. I think this can be largely attributed to the free use of antitoxine. (When I say free use I mean the City is supplying it free to the doctors).

In regard to typhoid fever; I do not think we are doing what we should do to combat this disease, I mean the whole Province. If our laws were as strict in connection with typhoid as they are in cases of smallpox we would have very little typhoid. In my opinion ninety per cent. of the cases of typhoid are caused by the open closet and the carrier is the fly. You passed a by-law last year that all parties living on streets where water and sewer mains were laid would be compelled to connect with same. Now, the by-law has not been enforced. I do not think you could enforce it in all cases. Take the case of a poor family that did not have the necessary cash to pay the plumber. I do not think you should impose a penalty in cases of this kind. What I think you should do is to do the work and spread the cost over a term of years and collect with the taxes. If you have not the power to do this, then I say, go to the Government and ask for the legislation that will give you the power. This system will not only improve the sanitary conditions of the City, but will increase the water works revenue as well. I have not lost sight of the fact that you have made over three hundred water connections this year, but there are more than twice this number of connections which should be made. The Board of Health has been asked several times this year to use the power vested in them to force the Council to extend the water and sewer mains. We have taken the ground that this power should not be used except in extreme cases, but we hope you will press the work along next year until all are served.

Your Medical Health Officer, Sanitary Inspector and Food Inspector have been most zealous in their efforts to improve the sanitary conditions of our City. They have found it necessary to bring a number of offenders before the Police Magistrate. This course is only taken after due warning.

I am pleased to say we have a good staff at the Isolation Hospital. Owing to the number of contagious cases in our City and District we are fortunate in having an institution of this kind where we can give the patients the necessary care. We hope that you will next year extend the water and sewer mains along Balsam Street so we can make connections with the hospital. At present we are using a windmill and pumping from the creek. This is not satisfactory as the wind does not always blow hard enough to work the mill and then we have to take the water in barrels.

Last winter, your City Engineer submitted a plan to the Board of Health, for their approval, for the extension of the waterworks intake pipe. We did not agree with the plan as submitted. The direction of the pipe was changed on the plan to meet with our approval, but when the pipe was put down it was not in the direction that we approved of. I do not know why this was done. I do think when you make further extensions to the pipe you should change the direction as suggested by the Board of Health.

ST. CATHARINES.

F. KING, M.D., M.H.O.

Herewith I beg to submit the Annual Report on the sanitary and other conditions of the City for the year ending October 31st, 1910. A glance at the tabulated matter as received from the Division Registrar will show the number of births, deaths, infectious or contagious diseases reported during the year. These, as referred to in the past, are incomplete owing to neglect in reporting cases as required by the Provincial Health Act.

VITAL STATISTICS.

There were recorded 276 births and 194 deaths. Of the latter, premature or still-births number twenty as compared with twenty-five recorded in the last report.

The mortality amongst children under one year of age, accounts for twenty-five as compared with twenty-eight last year.

Deaths of children under five years of age were five as compared with four in 1909.

When the increase in population during the past year is considered, these figures show a balance on the side of reduced mortality. Of contagious or infectious diseases, the following were reported.

Scarlet fever	10
Diphtheria	12
Measles	2
Whooping cough	7
Mumps	5
Typhoid fever	31

Of the total mortality, preventable diseases account for:

Tuberculosis	21
Diphtheria	1
Whooping cough	1
Typhoid fever	3

To which may be added:

Pneumonia	20
Cancer	7

As compared with last year, tuberculosis shows an increased rate. Nine of these deaths occurred in the Consumptive Sanitarium.

It will be noted that thirty-one cases of typhoid fever were reported to the Registrar. It is also on record that thirty-one cases were received into and treated at the General and Marine Hospital, of the latter, twenty-one were contracted outside the City, leaving ten accountable to local conditions, eight of these occurring in the same boarding-house and probably due to the same cause, were specially inquired into by a Committee of the Board, the cause ascertained and recommendations made to prevent a recurrence.

It will be noted that pneumonia and congestion of the lungs are responsible for twenty deaths, a rate about equal to that from tuberculosis.

It is gratifying to record that deaths from the ordinary contagious or infectious diseases of children during the year were but two, viz., one from diphtheria and one from whooping cough.

I again beg to point out that many of the contagious diseases reported, occur on streets unprovided with sewers.

SANITATION.

The general sanitary condition of the City has improved, due in part to the increased area from which garbage and other refuse has been systematically removed and in part, to the construction of several miles of sewers, with the accompanying installation of sewer connections, making a record, in this latter respect, in the past two years, far in excess of any previous period in the history of the City. As a direct result of this, there has been less sickness, suffering and affliction; a most hopeful improvement, the value of which as compared with the conditions existing only three years ago, is untold. Many of the objectionable matters recorded in previous reports still remain. I, therefore, again beg to refer the Board to the recommendations made last May, as to the advisability and necessity of requesting the aid of the Police Commission in carrying out a systematic and efficient inspection of all premises (as required by the Health Act) during the spring months.

THE MEAT SUPPLY.

The conditions under which this important article of food is now supplied have improved to an unexpected extent. I am informed by the most reliable dealers that fully seventy-five per cent. of the meat offered for sale is now inspected and bears the Government Official Stamp, "Approved."

MILK.

Milk is the most nutritious, the most wholesome and the most dangerous article of food consumed by man. In this connection I beg to draw the attention of the Board to an "Order in Council," dated 3rd day of November, 1910, establishing a standard for milk and its products which in part provides, "That milk shall be a fresh, clean and unaltered product, obtained under sanitary conditions from healthy cows, properly fed and kept, and containing not less than 3¼ per cent. of milk fat and not less than 8½ per cent. of milk solids. That cream should contain not less than 18 per cent. of milk fat, and that both the above shall be kept at a temperature of not less than 45 degrees F." With a very limited exception, the milk supply of the City is not produced in accordance with the provisions set forth above or as recommended by the Provincial Board of Health, or as required by the City by-law. This may be accounted for by the fact that so much land in the immediate neighbourhood does not produce the herds; that, many of the farms are not kept in that sanitary condition necessary to produce a product such as is set forth in the above quoted "Order in Council"; that with very few exceptions, no improvements have been made at the farms during the past year. Many of the vendors do not take the precaution to immediately cool the milk; while many of the dealers are honestly endeavouring to provide a fair article, others do wilfully and constantly disregard the provisions of the by-law with impunity. In examining samples of milk it is found that some record as low as one per cent. of milk fat, others from two per cent. to three per cent., which indicated the addition of water or the removal of a portion of the cream, a few record 3.50 to 3.75 per cent. The vendors delivering the latter quality are certainly handicapped in their business by the immunity allowed the former.

PLUMBING.

In a previous report, reference was made to the necessity of some inspection for this important work and in this connection I beg to draw attention to the number of deaths from pneumonia and kindred diseases, being the same average as that from consumption; many of these deaths may truly be attributed to impure air entering the dwellings from defective plumbing. The chief function of "Boards of Health" is to prevent diseases. I, therefore, respectfully desire to urgently impress on this Board to seriously consider the various subjects to which I have endeavoured to draw attention in this and other reports, all of which I consider to be in the best interest of the Public Health.

Many other items of sanitation might be referred to with interest and profit. I have, however, referred only to those which appear to be of the most importance at the present.

ST. THOMAS.

W. J. SHAW, SANITARY INSPECTOR.

The Board held twelve regular and two special meetings. The cases of disease reported during the year were as follows:

Disease.	No. Cases.	No. Deaths.
Smallpox	1	0
Scarlet fever	42	1
Diphtheria	77	8
Typhoid fever	11	4
Tuberculosis	0	4
Infantile paralysis	1	1
Cerebro-spinal meningitis	0	6

The case of smallpox which this City had to care for at an expense of over four hundred dollars was sent from Dutton by two physicians of that town. There seems to be some amendment of the Public Health Act required to prevent municipalities ridding themselves of their obligations in that way at the expense of other municipalities. The Dutton physicians availed themselves of the time allowed by section 89 of the Act and delayed their report until next morning when they were sure that the man who had the disease was beyond the jurisdiction of the Town authorities.

STRATFORD.

J. A. ROBERTSON, M.D., M.H.O.

I have the honour to present to you the annual report of the health of the City during the year ending October 31st, 1910. There have been in all 129 deaths from various causes. The primary cause of 34 of them was old age, they having reached the allotted span. The immediate cause is registered as occurring from various diseases.

Am pleased to report that that much dreaded disease, "the white plague," has been on the decrease, there being only 7 cases of deaths reported from such during the year. A knowledge of the fact that carefulness should be observed, on account of its being communicated from one to another, has certainly been the means of reducing the number of deaths.

Of preventable diseases we have had more than the average number of cases, especially diphtheria, there having been 110 cases reported during the year as compared with 32 cases the year previous. It was of a comparatively mild type, only 2 deaths from such having occurred. This fact tended to increase the difficulty which your officers had to keep the disease under control, for many cases being of such a mild type that no medical man was consulted, and those afflicted, therefore, mingling with others free from the disease communicated it to them. Through zealous work and vigilance on the part of your officers it is now almost extinct.

We have had about the average number of cases of scarlet fever during the year with no deaths.

There have been 6 cases of infantile paralysis reported. Through uncertainty of its being contagious, the usual precautions adopted for contagious diseases were carried out.

Isolation Hospital.—Your Board deserves credit for energy displayed in procuring a suitable site and the pushing forward of an Isolation Building, where contagious diseases can be treated with better facility and care than at home, and with increased safety and advantage to family so afflicted. The building is rapidly nearing completion and by the end of the year will be open to receive patients, if any.

Garbage Disposal.—This has been a vexed question and engaged the consideration of your Board for years, but it is to be hoped that by next spring some system of disposal will be formulated. Owing to the interest you have been taking in this matter your Chairman, officers and some members of the Board deemed it expedient to visit a number of the adjacent towns with a view of ascertaining their means of disposal and discussing with them the advisability of forming a Board of Health Association to discuss that and other sanitary matters for general improvement. It is to be hoped that appropriation will be made for the carrying out of some scheme next season.

Typhoid Fever.—The Provincial Board of Health are using every means in their power to prevent the occurrence of typhoid fever. Every case under the care of a physician has now to be reported to the Local Board, they then using every endeavor to ascertain the source, prevent if possible the development of other cases by removing the cause, and when convalescence is established have the house disinfected as in other contagious diseases.

We have had only twenty-seven cases reported during the year, a great falling off from that of other years, yet nevertheless I would impress upon you the necessity and advisability of asking the Council to pass a By-law doing away with all privies and wells within at least the fire limits; for the disagreeable and offensive odour from the one, and the danger of disease from both, are reasons for urging their removal.

Smallpox.—There were nine cases reported and attended to during the year. They were under the personal care and supervision of your officers, thereby making a saving to the City of about $1,140.

Slaughter Houses.—Your Board almost in its entirety visited the different slaughter houses supplying meat to the City, and found them in most instances in a deplorable condition, much more unsanitary than heretofore. Suggestions for acquiring a public abattoir have been under consideration, but on account of the lack of municipal funds it is found that, notwithstanding its desirability, it cannot at present be undertaken.

Recourse, however, can be had, by the butchers arranging with a local institution, in that of the Whyte Packing Company, which will, I understand, be pleased to make such arrangements for killing and cooling as will be satisfactory to both.

The public, if such were carried out, would be protected, as the sanitation of said institution is good and every animal is examined by a Government Inspector before being killed, while no harm could be done to those supplying the meat.

It seems that some, I should say, imaginary jealousy, seems to prevent those whose interests are at stake from taking advantage of conditions within their reach, so that I leave it to you to decide as to the course and action you will insist upon being carried out.

Milk Supply.—Your officers, together with the Chairman and other members of the Board, visited the different dairies supplying milk to the city. While every apparent effort seems to be put forth by the vendors to do what they think right, yet they are far from coming up to that standard of cleanliness and general sanitary conditions required. It is the desire of the Board to have them educated as to what is necessary, rather than having to resort to compulsion. Co-operation in a case of this kind will accomplish more than force. When the vendor realizes that any imprudence, carelessness, neglect or omission of cleanliness on his part may be the means of causing the death of many infants, he will feel a sense of responsibility which he cannot conscientiously cast off.

There are but few dairies, from which milk is sold to the city, which are kept clean enough or are properly ventilated. In many instances, horses, hogs, hens, etc., are kept in juxtaposition to the cows. In some cases the proper cleaning of the stables is neglected, and cobwebs, carriers of disease, are to be seen almost hiding the ceiling over the cows. Such dirt causes bacteria of putrescence in the milk, which often causes ptomaine poisoning.

The water used for drinking, as well as for washing the cans, is in some cases taken from a well in the byre, surrounded by impurities, and consequently unfit for the purposes required to be used. The vendors of milk must realize their responsibility and keep their byres, practically, almost as clean as their kitchen, and be as careful to have pure water for the cows' drinking and the washing of cans as for their own personal use.

They should start at once to educate themselves towards proper sanitation, for no doubt important legislation will be brought about at the next session of Parliament in view of the report of the Milk Commission, which will undoubtedly be presented during the session. Promptness of action will reward those who accept suggestions thrown out. "A word to the wise is sufficient."

Examination of the milk *per se* from time to time was made and tested as to standard of butter-fat and solids, and found on the whole very satisfactory.

The milk supply is a very important factor as to the health of the City, consequently any action of your Board, however stringent or drastic in connection with its action in endeavoring to improve its sanitation will be sustained and hailed with delight by the public.

I must congratulate the Board on the interest they have taken in sanitary matters, as evidenced by your regular attendance at the various meetings held during the year. I was pleased to see that the Mayor and Chairman, Ald. Trow, as well as Dr. Eidt and his committee, spared no pains as far as was in their power to advance sanitary reform in the City. Your Sanitary Inspector deserves no small amount of praise for his faithful attention to duty, strenuous labour and fearlessness to danger of personal contagion.

WINDSOR.

S. Lusted, Secretary.

In my last annual report I submitted a recommendation that you request the City Council to relieve you of the responsibility and duty of collecting and disposing of the garbage and house offal throughout the municipality, the prosecution of which service had cost the Board $1,400 per annum under contract, and at the same time made it all too apparent that the work was insufficiently performed, complaints from householders being constantly made of oversight or neglect by the contractor or his employees in gathering up and disposing of refuse. This recommendation having been adopted by you, the Council promptly complied with the request and empowered the Public Works Committee to procure any additional apparatus necessary for the purpose and at once proceeded with the cleaning up of the City, removing all ashes and other refuse and house offal regularly and continuously throughout the year. The result of this change has far more than justified expectations, for although the expenditure of public money has been considerably increased, the increase is readily and satisfactorily accounted for in the more extended and perfect execution of the work. When the Board had charge of the service the removal of ashes each spring was not included, but was done by the Board of Works, and no serious attempt was made to keep tab on the cost; and whatever the sum really amounted to, it was certainly much more than in 1910, and also over and above the $1,400 paid by the Board. City Engineer Brian this year made arrangements at the outset for an exact account being kept of each part of the scavenger work from day to day, and his figures total the following amounts: For the removal of ashes alone in the spring, $1,076.50; removal of accumulated rubbish and garbage, $972.79; garbage collection and removal regularly during the season, $1,274.54. The exact cost to the City in 1910 is, therefore, $3,323.83. The Engineer has the corporation divided into six parts for convenience and effective work, and a team and driver assigned to each of said parts, each of which teams traverses its division regularly once each week. If garbage at any time has not been removed at the precise time that it should, the fault has been with the householder in not placing it where the collector could get it. Following the thorough work thus effected the first year of the improved method, it is apparent that the expenses of the Public Works in this service will be very materially lessened in 1911 and go on decreasing from year to year, for the reason that natural gas has taken the place generally of coal for fuel. The better and more general this scavenger work becomes the better will be the sanitary condition of the City. A little better co-operation on the part of the householders with the civic authorities in this matter will soon make the alleys as clean and healthy as the streets—a condition devoutly to be desired.

CONTAGIOUS DISEASES.

The number of families in the City visited during the year 1910 and reported to this office, and the number of deaths resulting from such visitation, is respectively as follows:

Diphtheria	Families	19	Deaths	from	Diphtheria	0
Scarlet Fever	"	36	"	"	Scarlet Fever	0
Typhoid Fever	"	4	"	"	Typhoid	10
Measles	"	1	"	"	Measles	0
Total		60	Total			10

So far as typhoid fever is concerned, very little attention is paid to the law requiring every case to be reported.

PLUMBING AND DRAINAGE WORK.

Owing to the illness and death of the former Inspector of Plumbing, Mr. Donald Grieve, an event deeply regretted by all members of the Board, I have been unable to obtain anything like an accurate statement of this important branch of the sanitary work for the year, and therefore make no attempt to set out the same. The new Inspector will henceforward keep the desired information upon this work.

Looking to the safeguarding of citizens against every communicable disease, an important step has recently been taken by the City Council in the passing of a stringent by-law regulating public laundries and licensing laundrymen—a praiseworthy, health-protecting procedure of which citizens at large should signally approve, Hitherto these places received goods from all classes of people, accumulating the same in cramped and often unclean quarters, washing and laundering the same indiscriminately, and later distributing the supposedly clean articles to the respective owners, who doubtless in the main suppressed rising fears of possible consequences from thoughtless exposure or perhaps actual contamination of their linen. Under the operation of the by-law mentioned, the respective laundries and all contrivances and conveniences in connection therewith must pass a rigid examination by the Chief of Police and be made free of everything that can endanger health whether of patrons or employees; while the necessity of obtaining a license that may be cancelled for cause, and the cost of the license, will together act as a guarantee of willingness on the part of the licensees to observe such regulations as the Inspector may under the law impose.

ISOLATION HOSPITAL.

In order to be prepared for any emergency that could arise, and because of the existence of smallpox in Michigan, from whence exposed persons might readily enter Ontario at this point, the local hospital and all its appointments were early made ready for occupation and use; but fortunately no case of that disease has been developed here, nor in either of the municipalities that rely upon our conveniences when invaded. The Board has the satisfaction of knowing that their alertness to meet trouble should it come has the approval of the taxpayers.

WOODSTOCK.

F. S. RUTTAN, M.D., M.H.O.

I beg to present the following report of the Health Department for the year ending November 15th, 1910.

Owing to laxity in reporting contagious and infectious diseases the returns are necessarily incomplete.

It has been the custom to report only the cases of scarlet fever, measles, diphtheria and smallpox.

Several months ago the Board of Health issued notices requesting a report of infectious and contagious diseases. This request has not met with a response, hence whooping cough, mumps, chicken-pox, erysipelas, typhoid fever and pulmonary tuberculosis are not reported and no means taken to limit the spread of these diseases among school children and others who may be exposed.

CONTAGIOUS AND INFECTIOUS DISEASES REPORTED.

Scarlet Fever	24
Diphtheria	8
Typhoid Fever	17
Erysipelas	2
Smallpox	7
Chicken-pox	1

There were 138 deaths (exclusive of still births and suicides) due to the following causes:

Arterio-Sclerosis	14
Pulmonary Tuberculosis	9
Heart Disease (Organic)	8
Bright's Disease	7
Apoplexy	7
Anæmia	6
Cancer	6
Pleuro-Pneumonia	6
Marasmus	4
Cholera Infantum	4
Whooping Cough	5
Pneumonia	3
Typhoid Fever	3
Uræmia	3
Epilepsy	3
Abscess of Kidney	2
Prostatitis	2
Railway Accident	2

One death from each of the following causes:

Erysipelas, Capillary Bronchitis, Cirrhosis of Liver, Intestinal Obstruction, Tubercular Peritonitis, Carbuncle, Dysentery, Diabetes, Congestion of Lungs, Oedema of Lungs, Angina Pectoris, Exophthalmic Goitre, Diphtheria, Hydrocephalus, Bronchial Asthma, General Paralysis, Paralysis Agitans.

The deaths occurred between the following ages:

	Male.	Female.
Still Born	3	4
Premature	0	1
Under one week	0	6
Under one year	5	11
From 1 to 5 years	1	1
From 5 to 10 years	0	1
From 10 to 20 years	4	3
From 20 to 30 years	2	7
From 30 to 40 years	4	4
From 40 to 50 years	2	7
From 50 to 60 years	10	9
From 60 to 70 years	13	8
From 70 to 80 years	9	8
From 80 to 90 years	9	11
From 90 to 100 years	2	2
	64	83

SANITATION.

The sanitary condition of the City is far from satisfactory. Nearly every sanitary regulation or by-law is more or less violated.

There is no system for the collection of garbage. The removal of it is left to the individual householder, who may dispose of it at irregular intervals, either to irresponsible persons who may in turn deposit it in an undesirable place or the householder utilizes the so-called dry-earth closet as a garbage receptacle. In many cases the garbage is buried in a shallow hole at the rear of the lot—later to become a mass of decayed vegetable matter, emitting its characteristic vile odour—a breeding place for flies and a nuisance to the neighbour.

There are 750 so-called dry closets in the corporation, 574 being in the sewer area. Many complaints have reached me during the year concerning the offensiveness of privies and I recommend that a by-law be passed compelling sewer connection of all privies in the sewer area. It may seem a financial hardship for those who are on the lines of sewers to make connections therewith, but in all reforms sacrifice has to be made and where the health of the public is concerned, to say nothing of the convenience and benefits derived, this sacrifice should be made willingly.

The City should have authorized dumping grounds for the reception of ashes, etc., prohibiting the deposit thereon of animal or vegetable matter; by so doing much good ground would be made and what are at present disgraceful looking areas would soon become lots that would be utilized.

We should not forget that much of the beauty of our City is due to the individual occupant of a premises, hence the City should do its share in making some of our rear lanes more sanitary, and this can only be accomplished by paving and the placing of proper sewers.

A report should be furnished of all unsanitary drains, houses with sinks discharging in their yards, badly drained cellars, etc., that such defects may be remedied as soon as possible.

I would recommend the licensing of laundries, fruit stores and restaurants that they may be under the supervision of the Board of Health.

PLUMBING, ETC.

We are much in need of plumbing regulations and the enforcement of them, whereby we may know that plumbing is of a sanitary character and escape the danger of disease from defective unsanitary plumbing.

WATER SUPPLY.

Have examined water from four wells and found the water unfit for use—as a result city water has been installed to eight families.

The by-law relating to the cleaning of wells is not enforced.

Situated as we are with an abundance of pure water there is no reasonable excuse for the existence of wells within the corporation.

PUBLIC ABATTOIR.

Another matter to which I wish to draw your attention is in regard to the construction of a public abattoir.

Conditions as revealed at one of our local slaughtering houses should be a sufficient stimulus to see that meat for consumption is not tubercular. Inspection of meats can only be thoroughly made at the time of slaughter and not when the carcass is on the market.

BAKERIES.

With three exceptions the City bakeries do not meet with the requirements of the Public Health Act. Some of them are better or worse than others. One bakery particularly is badly ventilated, while several bakeries were found unsanitary, floors, walls and ceiling dirty, sinks uncared for, while the common fly that does not wipe its feet was too much in evidence.

War must be declared against the disease-carrying house fly. The fly eats and walks over tubercular sputa, excreta and filth of every description, then deposits this on the food. Many diseases are, no doubt, spread by this means.

MILK.

Milk has been tested monthly at irregular intervals—have used the Babcock Test for butter fat (154 samples being tested) and the quality of milk has improved.

Herds, byres and cooling stations were inspected by our Veterinary Inspector twice during the year. Previous reports have been unsatisfactory, hence we have adopted the Provincial score card which is explicit and to the point.

I wish to congratulate the Board of Education upon installing the Sanitary Bubbling Fountain Drinking System in our new schools, and recommend that this system be extended to the other schools and places where the common and public cup is used.

The danger of drinking from the common and public cup cannot be over-estimated. Many diseases are innocently acquired and innocently transmitted by this means. Then why should we not protest against the use of the common drinking cup and absolutely prohibit its use?

In conclusion I wish to acknowledge many courtesies and suggestions from Dr. McCullough, Chief Health Officer of Ontario, Dr. James Roberts, Hamilton, and Dr A. R. B. Williamson, Kingston.

REPORTS OF MEDICAL HEALTH OFFICERS IN TOWNS OF 5,000 POPULATION AND OVER.

(As received by the Secretary.)

BERLIN.

J. McGillawee, M.B., M.H.O.

I beg to submit the Medical Health Officer's Report for the twelve months ending December 1st, 1910.

The number of cases suffering from contagious and infectious diseases has been larger than in the preceding year.

During the first half of the year there were epidemics of both chicken-pox and measles which spread over the whole Town. 6 deaths from complications following measles.

From May to September (inclusive) there were a number of cases of infantile paralysis, about 20 in all. One death reported from infantile paralysis.

At present mumps are prevalent.

Owing to cases not being reported there is no exact record of cases of typhoid fever, but the number has not been large. In several cases the disease was contracted outside of Berlin. There were 4 deaths from typhoid fever.

There has been a decided increase in the number of cases of scarlet fever and diphtheria over the preceding year. There have been 65 cases of scarlet fever and 25 cases of diphtheria.

The Board of Health has done its utmost to prevent the spread of these diseases, but was heavily handicapped by the want of an Isolation Hospital to which infected persons could be removed and properly quarantined.

There were 2 deaths from diphtheria and 3 from scarlet fever. At present there are 5 cases of scarlet fever on the card and 1 case of diphtheria.

The number of deaths from different causes recorded during the twelve months was 218.

There were 8 deaths from tuberculosis, 3 deaths from whooping cough and its complications.

BROCKVILLE.

A. J. Macauley, M.D., M.H.O.

While the number of contagious and infectious diseases has exceeded somewhat that of last year the mortality has happily been small, and the excess is mainly due to diphtheria which has persisted since the early spring months, and although the most earnest efforts to stamp out this outbreak by means of the most rigid isolation, careful fumigation and thorough disinfection of exposed persons, cases have appeared from time to time ever since the first outbreak. The only explanation I can make is that possibly mild cases have been overlooked, and not being reported to the Board, no precautions were taken to prevent the infection of others; this is quite possible as the disease is much more readily communicated to young persons than to adults, while the latter do not usually have the disease in so severe a form.

Of measles we had a large number reported in the early months of the year, but they were generally of a mild type.

Of scarlatina only 3 cases have been reported during the past year.

Of typhoid only 10 cases have been reported in Town during the year, but 9 additional cases from out of town have been treated in our hospitals.

Of chicken-pox we have had 14 cases, and of smallpox 2, with one suspect who happily did not have the disease.

Of the two cases of smallpox one was well advanced when discovered; he was treated at home, the house being thoroughly fumigated and exposed persons vaccinated. No further infection appeared. The second occurred in the early part of October and the patient was removed to the Isolation Hospital, his house fumigated and family vaccinated, no other cases occurring.

Another disease, of which we had a good deal of worry and of which unfortunately 20 cases have been reported, is acute anterior poliomyelitis (infantile paralysis). A great difficulty we found in combatting this disease is the impossibility of making an early diagnosis, as often this is impossible until the paralytic symptons manifest themselves, hence the patients in the early stages escape quarantine.

The Town milk supply has been above the average during the year, and in no case has the percentage of butter fat been below the standard established by this Board, neither has water been detected in any of the samples supplied.

The water supply of the Town (an analysis of which has been made monthly at the Provincial Laboratory) while not as good as it should be, shows an improvement on last year's supply and it cannot be expected that it will be further improved until a proper filtration plant is installed. However, no typhoid germs have been detected in any of the samples sent to the Laboratory.

The number of births reported is 242, and the number of deaths 165.

COBALT.

Chas. H. Hair, M.D., M.H.O.; R. L. O'Gorman, Secretary.

In view of the fact that the Health District of the Town of Cobalt and that of the Township of Coleman are so closely allied, it is difficult to ascertain the exact source of every case of contagious or other disease.

In the following schedule the different cases which occurred in the vicinity of Cobalt are set out, and, so far as can be ascertained, the source of same:

Contagious Diseases, 1910.

In Mines Hospital.	Typhoid Fever.	Diphtheria.	Mumps.	Smallpox.
Buffalo	7	1		
Beaver	1			
City of Cobalt	6	1		
Crown Reserve	1	2	3	
Coniagas	5	2		
Colonial	1			
Cobalt Lake	1		1	
Hydraulic Power Co.	5			
H. D. Symmes	2			
Hargrave	2			
Kerr Lake	1		6	
Little Nipissing	1	2		
La Rose	6		1	
Nipissing	4	1		
Nip. Red	1			
Nova Scotia	1		1	
O'Brien	3			
Princess	2			
Right of Way	1		2	
Silver Cliff	2			
Silver Queen	1		1	
Shamrock	1	1		
Townsite	3			
Trethewey	4	1	9	
Temiskaming	1	3		
Beach Bros.	2			
Ophir		1	1	
Drummond		2		
McKinley Darragh			1	
Wyandoh			1	
Kerry			1	
Cobalt Prp.			1	
Sustignang			1	
	65	17	30	
In Municpal Hospital	26	33		
Cases Treated Outside of Hospitals	40	6		54
Totals	131	56	30	54

All cases of smallpox occurred during the months of January to May. The typhoid cases occurred in the early spring and in the autumn, the greater number of cases treated being in the month of September. The diphtheria was most prevalent in the months of February, March and April. During the months of October, November and December, the Town has been entirely free from any contagious diseases and only an occasional case of typhoid has occurred.

The cases of diseases shown in the above schedule, the origin of which is directly traceable to the Town of Cobalt, are as follows:

Typhoid Fever	69
Smallpox	36
Scarlet Fever	4
Diphtheria	36

The local Board of Health of the Town of Cobalt held twenty-six meetings during the year, and incurred an expenditure of approximately $2.500. Of this amount, $1,500 was expended in the improvement of the sanitary condition of the Town and $1,000 in taking care of contagious diseases.

During the first six months of the year the scavenging of the Town was conducted under contract, after which it was taken over by the local Board of Health and operated by the Municipality under the supervision of the Sanitary Inspector. Better sanitary conditions resulted from this method of conducting the work.

CORNWALL.

C. J. HAMILTON, M.D., M.H.O.

As Medical Health Officer of your Town I beg to submit my annual report of the sanitary condition of the Municipality for the year 1910, as required by the Public Health Act.

First, I have to congratulate the Municipality on the freedom it has enjoyed in the past year from any serious disease; in fact, the year just coming to a close has been one of the healthiest years since I have filled the position of your Medical Health Officer, covering a period of some twenty odd years (which practically leaves me little further to report).

During the year the Council has also inaugurated a first-class intake to our water and sewers, and I can now report, without fear of successful contradiction, that Cornwall enjoys one of the best systems of water and sewerage of any town in our Province.

The outlet of our sewers is of such a character as to render it practically impossible for the drinking water to become contaminated from sewer deposit.

During the year the Council has also inaugurated a first-class intake to our water system, carrying the same out into the river that it may secure depth of water and the benefit of a continuous and rapid flowing stream as the source of supply, thus insuring good and wholesome water for our citizens.

The Council has also secured two very satisfactory garbage or dump grounds, thus providing the Town with ample means of getting rid of all garbage and other offensive material.

The few and isolated cases of measles and scarlet fever that have occurred in the Municipality have been cared for as in former years, and in no instance have they been followed by fatal results, so that the Town, as a whole, has every reason to be thankful for its present sanitary condition.

GALT.

T. W. VARDON, M.D., M.H.O.

I beg to make the following report for the year ending 1st November, 1910. The general health of our people and sanitary condition of the Town have been satisfactory during the past year.

There have been 14 cases of scarlet fever, 14 cases of diphtheria, 17 of typhoid fever, and 1 case of smallpox reported.

We have had 10 deaths from tuberculosis of the lungs; 2 from typhoid, and 1 from scarlet fever. In all there have been 154 deaths. 14 of these were still-born, and 9 died in Galt Hospital, brought here from outside places for treatment. Deducting these, reduces the number to 131, making the death rate a fraction over 13 per thousand of our population.

Total number of births, 209, being about 21 per thousand, shows that race suicide has no hold on the people of Galt; in fact, to use the words of a local sage, you can "watch Galt grow."

Some months ago, a case of confluent smallpox, in the person of a commercial traveller, was reported. He was at once removed to the Swiss Cottage, and kept there until he had fully recovered. He had acquired this disease in a hotel down in one of the maritime provinces; he had not been vaccinated. Although eight persons were exposed for five days at the house he was staying at here, none of them developed the disease. I attribute this to the fact that all these persons had been successfully vaccinated a few years ago, and again re-vaccinated at the time of exposure.

One hundred and five connections have been made to the sewers during the year. In all cases where new buildings are erected on the line of sewers, the owners have made the necessary connections at once. Notices have been served on many property owners to connect their premises to the sewer within thirty days; if these connections are not made, prosecutions will follow.

The milk has been tested by Mr. Hart a number of times, and in nearly every case the butter fats contained therein have been up to or above the standard, namely, 3.5 per cent.

All of our laundries are now licensed, and are inspected before license is granted.

One thing that is constantly before us is the suppression of nuisances, and it is our duty in so far as it is possible to abolish unpleasant sights, sounds and smells. Hygiene has taught us that obnoxious odors are frequently associated with epidemics of disease. The grating sounds of screeching whistles are neither conducive to good health nor the improvement of temperament. While concessions must be made to the necessities of modern industrial methods, all unnecessary noise should be done away with. The allaying of dust on our streets is of great importance, and the system now in use of oiling or watering the same should be extended. The by-law against expectorating on the sidewalk, in public buildings and street cars will be strictly enforced, and offenders will please take notice that they will be brought to book if they are caught breaking this law.

Galt, I believe, is one of the most cleanly Towns in Canada, and it is incumbent on the individual householder to keep it so. If you find a nuisance of your own making, do away with it; or if from any cause where you cannot remedy it, notify the Board of Health at once.

In as far as it is possible, destroy all house flies. This can be accomplished to a great extent by keeping the back yards clean.

In all cases of sore throat, the family physician should be consulted, as diphtheria or scarlet fever may be lurking in disguise, and valuable lives are often lost by neglect, the disease not being recognized in time.

I hope that the garbage by-law will be soon passed by the Council, and that it may be in operation next spring.

INGERSOLL.

J. A. Neff, M.D., M.H.O.

In making this my annual report for the year ending November 15th, 1910, I am pleased to say that the health of our people and the sanitary condition of our Town have been almost all that could be desired during that period.

The total number of deaths, including still born, were 63 and the number of births reported were 97. There has only been one death from typhoid fever and one from tuberculosis during the year. The total death rate after deducting the still born is only 12.2 per thousand.

We have been remarkably favoured in not having an epidemic of any kind to contend with, there having been but two cases each of diphtheria and scarlet fever reported during the year and these were all mild cases. In each of these cases the premises were thoroughly disinfected before the placards were removed.

Milk samples were taken from the vendors' supplies and tested during the summer. All samples tested well, showing that the citizens were receiving milk of good quality. Some of the milkmen are delivering their milk in bottles, for which they should be commended. I hope the rest will soon adopt this method of delivering.

The Town water has been tested several times by the Provincial Board of Health and no impurities other than colon bacilli have been reported.

The sanitary inspection of the Town has been well looked after by our sanitary Inspector, who has been most assiduous in his duties.

I would recommend the Council to pass a by-law licensing laundries, restaurants and fruit stores that they may be under the supervision of the Board of Health.

Would also like to direct the attention of the Council and citizens generally to the great necessity of a sewerage system in the Town.

I am pleased to thank the Chairman and members of our local Board of Health and the Sanitary Inspector for so cheerfully giving their time and assistance in all matters of public health.

OWEN SOUND.

H. G. MURRAY, M.D., M.H.O.

I beg herewith to present my annual report for the year 1910.

For the first time in several years the sanitary interests of the Town have been looked after entirely by the Board of Health. We believe that the change, whereby the Public Health Committee of the Town Council was done away with, has proved quite satisfactory. It certainly has been a much more satisfactory way of handling the accounts; those responsible for the spending of the money being present at all the meetings of the Board.

Judged from the amount of infectious disease reported, 1910 has been a satisfactory year, a remarkable decrease in the number of serious infectious diseases being noted, the figures for the past three years being as follows: For ten months of 1908, 72 cases; in 1909, 69 cases; in 1910, 30 cases. Several times during the year scarlet fever and diphtheria were introduced from outside, and in each case the infection was limited to the infected house. This is the test of the efficiency of quarantine and other sanitary measures and speaks volumes for the zeal and care displayed by the Inspector, Mr. King. Typhoid fever was not as prevalent as usual and was of a mild type; a small epidemic during August and September proved interesting from the fact that the cause of it was located in an old well belonging to a milk retailer. Several of his customers were infected before the cause was found; not one occurred after. Samples of the water forwarded to the Provincial Board proved infected and demonstrated the correctness of our view. No cases of typhoid can be traced to the general water supply, which is excellent.

The Scavenger By-law is now working in a satisfactory manner, the new man giving an efficient service. I strongly urge the Council to resist the pressure being brought to bear from some quarters to relax in the slightest the terms of this excellent measure. No loop holes can be allowed without endangering the integrity of the whole. The general disposal of garbage and night soil has not been satisfactorily determined; steps were taken to provide an incinerator, but so far no plan has been found feasible. The Board of Health has instructed the sending of a man to Parry Sound, where an incinerator is working, and we hope next year to have the matter settled. As soon as this is done a general Garbage By-law, instituting weekly garbage collections, will require to be passed.

Appended is a report of the condition of the dairies of the Town. This report will be found to cover more ground than usual and we trust will prove interesting. We expect in future to publish these results and hope this will have a salutary effect. I regret to say the milkmen suspended the delivery of milk in bottles this fall. This is a retrograde step and should not have occurred. Beginning with the next license year, viz., May 1st, all applicants for licenses to sell milk will be compelled to agree to deliver in bottles—it must be made compulsory. The Board of Health is the proper party to make regulations regarding the sale of milk, and not the dairymen. Consumers must be warned that bottles are not to be used for milk pitchers on their tables; the milk must be emptied at once, the bottles thoroughly washed and placed upside down and in the sun. Bottles broken by consumers must be paid for by them. In connection with dairy inspection I would strongly urge on Town Council the necessity of appointing a competent veterinary surgeon to inspect all dairies and cattle and report to the Board. This inspection should be made at least three times a year.

Owners of Inspected Dairies.	Producer's Score—100 Perfect.	Retailer's Name.	Average Score of Retailer—100 Perfect.	Average butter fat content per cent.
Dixon Clarke	.95	D. Clarke	.95	3.77
J. Benner	.85	J. Benner	.85	4.26
Stan. Walters	.80	Stan. Walters	.78	3.9
Sam. Walters	.70			
Wm. Hodgson	.85			
A. McDonald	.75	A. McDonald	.75	4.
P. Harwood	.70	P. Harwood	.70	3.86
Thos. Kennedy	.70			
Geo. McKay	.70			
Geo. Harwood	.70			
A. Nichol	.70	A. Nichol	.65	3.99
J. Logan	.60			
W. Johnson	.65			
Isaac White	.65	I. White	.65	3.8
C. C. Bleich	.80	C. C. Bleich	.64	3.56
Geo. Sargeant (1)	.60			
Geo. Sargeant (2)	.70			
Wm. Sargeant	.70			
Neil King	.40			
I. Dixon	.40	I. Dixon	.62	4.3
Wm. White	.83			
J. Walters	.30	J. Walters	.60	4.24
Wm. Wilsie	.75			
Mr. Poast	.75			
L. Kivell	.40	J. Walters	.40	4.2
Wm. Boyd	.15	Wm. Boyd	.20	4.26
W. Boyd	.45			
Wm. Frizzell	.0			

Consumption again looms large in the mortality statistics, 20 deaths in Owen Sound being due to this cause, and there is strong suspicion that there are several more due to the same cause. In at least two cases the cause of death was not correctly stated. I believe the time is ripe for making notification of tuberculosis compulsory; this is absolutely necessary if any system of control is to be adopted.

It seems to me that some steps will have to be taken by the Town Council or the Board of Health to relieve the condition of our consumptive poor; several instances of nearly whole families succumbing to this disease have come under our notice. This is absolutely preventable. A lecture by Dr. Porter on the subject of the prevention of tuberculosis, and an exhibition car sent by the Provincial Government aroused a great deal of interest. At the close of the lecture a representative committee of ladies and gentlemen of the Town was appointed to arrange some method of preventing this waste of human life. This is a hopeful sign and I believe will prove of the very greatest assistance to us in fighting tuberculosis.

Cancer caused 8 deaths during the year—this is fewer than last year.

The acute diseases were either less numerous or less severe. This is particularly the case regarding infantile dysentery, which proved so severe and deadly last year.

Only one case of infantile paralysis was reported; it was mild. There is no cause for the alarm exhibited by the public and fostered by portions of the Press regarding this disease. We have had it with us for hundreds of years; it is very mildly infectious and there is not the slightest danger of a general epidemic.

It gives me pleasure to express to the members of the Board of Health, collectively and individually, my appreciation of their kindness and assistance to me in cases of difficulty arising out of our work.

For Mr. King's work nothing but praise can be given; without his help I am afraid I could not possibly do the work, which is getting more arduous every year.

SARNIA.

A. C. Poussette, M.D., M.H.O.

In accordance with instructions contained in the Public Health Act, I beg to report as follows:—

It will be remembered that at this time last year I reported the existence of a rather severe epidemic, both of scarlet fever and diphtheria being present in the Town at that time, and that there were then twelve houses under quarantine.

Both scarlet fever and diphtheria continued to be prevalent until the end of April, and during the first four months of the present year seventeen houses were quarantined for diphtheria and fourteen for scarlet fever. During the remaining eight months of the present year there have only been eight premises quarantined, and at the present time there is only one card up.

I am unable to give the number of persons who have suffered from these diseases, for the same reason as that given in my last report, namely, that the medical attendants seldom report more than the first case appearing in a family, as they seem to consider when the card is up that is all that is necessary.

There have also been five cases of smallpox, all of which recovered.

During the year I have been employed on Board of Health business portions of one hundred and forty-six days.

I have made thirty visits to infected houses, and have had twenty-one complaints of nuisances brought to my notice, a majority of which I personally inspected and have had them all abated.

With regard to these nuisances a large number were caused by the unsanitary condition of outside closets, and it was with much satisfaction that the action of the Town Council was viewed in passing a By-law regulating these nuisances within a certain portion of the Town, but from my own observation I fear but little has been done towards carrying out the provisions of the said By-law.

On September 1st I examined eighteen samples of milk collected that morning from the vendors supplying the Town and had the result published.

In all matters coming under my notice I have endeavoured to carry out the wishes of the Board as far as it was possible to do so.

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